Annual Report

Department of Fisheries and Aquaculture

Prince Edward Island

for year ended December 31st

1989

90-07348/

TO HIS HONOUR

THE HONOURABLE LLOYD MACPHAIL,

Lieutenant Governor of the Province of Prince Edward Island

May It Please Your Honour:

I have the honour to submit herewith the Report of the Department of Fisheries and Aquaculture for the period ended December 31, 1989.

I have the honour to be, Sir.

Your obedient servant,

HONOURABLE LEONCE BERNARD,
Minister

TO THE HONOURABLE LEONCE BERNARD
MINISTER OF FISHERIES AND AQUACULTURE
Charlottetown, P.E.I.

Sir:

I have the honour to submit herewith the Report of the Prince Edward Island Department of Fisheries and Aquaculture for the period ended December 31, 1989.

Respectfully submitted,

Douglas A. Cameron,
Deputy Minister

TABLE OF CONTENTS

	Page No.
Foreword	4
Administration	7
Prince Edward Island Fisheries	11
P.E.I. Fish Landings and Values	12
Commercial Fisheries Branch	15
Extension Division	16
Resource Utilization and Marketing Division	25
Processing and Quality Division	41
Financial Services and Special Projects Branch	47
Aquaculture Branch	54

Appendices

1 - P.E.I. Lobster Landings and Values - 1920-1989	64
2 - General Fisheries Facts 1989	65
3 - P.E.I. Fish Landings - 1975-89 (Millions lbs)	66
4 - P.E.I. Fish Landings - 1975-89 (Millions $)	67
5 - P.E.I. Lobster Landings & Values - 1970-89	68
6 - P.E.I. Fish Landings - % of Volume by Species	69
7 - P.E.I. Fish Landings - % of Value by Species	70
8 - P.E.I. Production Sales - % of Value by Product	71
9 - P.E.I. Export Markets - % of Value Per Country, 1988	72
10 - Organizational Chart	73

FOREWORD

ANNUAL REPORT

Although I have only recently assumed my duties as Deputy Minister of Fisheries and Aquaculture, I will attempt to highlight activities in the fishery in the past year as I perceive them.

The fishing industry in Prince Edward Island continues to be a vital component of our economy and a significant contributor to employment in the Province. It is estimated that in excess of $185 million was contributed to the economy in 1989 from the primary and secondary fisheries sectors and support industries. The fishing industry generated employment for more than 7,000 people in 1989 which represents more than 10% of the provincial workforce.

Despite this strong performance, the past year produced some uncharacteristic results for the P.E.I. fishery. The most notable was a weakening of traditional lobster markets. The P.E.I. lobster fishery has experienced a period of strong growth throughout the 1980's and the fishing industry has successfully marketed the increased production. However, a variety of market forces led to a slowdown in 1989 and the impact is evident with a decrease in landed value of 10% over the previous year.

Another concern relating to the lobster fishery was the passage in late 1989 of legislation by the United States Congress which will prohibit shipments of live lobster into the U.S. market unless they meet the U.S. legal size limit. Currently that limit stands at 3-1/4" carapace measurement and is scheduled to increase in the future and differs from the traditional market size of 3-3/16" currently in use in Canada. The effect of this legislation will be to restrict market access for part of our lobster production and we support the action of the Federal government in requesting a panel under the Free Trade Agreement to rule on the validity of the American legislation. The Panel is expected to rule on this matter in late spring of 1990.

Another notable marketing problem experienced by the P.E.I. fishery in 1989 was related to herring roe production. The primary market for herring roe is in Japan and the reduced consumption in that country related to the period of mourning following the death of Emperor Hirohito, sharply reduced purchase commitments by the Japanese. The result was that landings of herring for roe production dropped in 1989 by close to 60% with the value of the catch down by 67%.

The past year was certainly not without its successes in the fishery with landings of redfish increased sharply in reflection of the quota allocations which have been achieved for P.E.I. and

the fleet upgrading carried out by Usen Fisheries Ltd. While landings of cod and flatfish species were down slightly, the value of the catch was up by approximately 25% signaling a welcome turn around of lower market returns received in the previous year.

The aquaculture sector of the P.E.I. fishery experienced continued growth in 1989 with production of Island Blue Mussels increased by almost 50%. Production of our world famous Malpeque Oysters also grew in 1989 demonstrating that enhancement programs carried out by both the Provincial and Federal governments and the shellfish industry are paying dividends. A notable achievement in the area of finfish culture was the formation of the Island Cultured Fish Cooperative to assist in marketing production of finfish aquaculture products. Members of the industry and representatives of the Federal and Provincial Departments are in the process of finalizing work on a Salmonid Development Strategy for P.E.I. which should serve to focus long term development of the finfish sector.

During the 1989 session of the P.E.I. Legislature, the name of the Department was formally changed to the Department of Fisheries and Aquaculture in recognition of the increasing economic importance of the sector and the fact that aquaculture affords an excellent opportunity to broaden the Province's resource base. Also approved in 1989 was the formation of a full Branch of the Department devoted to aquaculture development and the staffing is currently nearing completion to provide additional professional staff to the Aquaculture Branch.

During the past year, the Department addressed numerous fishery management issues with the Federal Government. The ongoing liaison with the fishing industry and resource monitoring efforts were used to formulate advice which the Department provided to the Federal government through the management advisory committee process.

A new management regime for mobile groundfish vessels in the 50 - 65 ft. category was introduced during the past year and the Department actively represented the needs of the Island fishery in that process and numerous other issues related to our groundfish resource. The equitable participation of P.E.I. fishermen in the snow crab fishery continues to be of importance and the Department has been and will continue to represent the Province's interest in that regard. As well, a new management plan for Atlantic Bluefin Tuna was a source of concern to P.E.I. fishermen in 1989 and as the management plan for 1990 is formulated, the Department will be working with fishermen to ensure their concerns are clearly addressed to the Federal government.

A new Canada/P.E.I. Cooperation Agreement on Fisheries Development was signed in October of 1989. The new Agreement will provide a total of $10.6 million in development funding for the P.E.I. fishery over a five year period ending in March 1994. The main program areas under the Agreement are aquaculture, quality, infrastructure and resource utilization. The Agreement should provide the impetus for continued cooperative development of the fishery by both levels of government and the P.E.I. fishing industry.

As indicated at the outset, I am new to the fishing industry on P.E.I. but I have quickly recognized its importance to our Province. I look forward to the challenge of addressing the issues and development needs of the fishery in cooperation with all members of the industry.

Douglas Cameron

Douglas Cameron,
Deputy Minister

DEPARTMENT OF FISHERIES

ADMINISTRATION

The approved budget for the Department of Fisheries and Aquaculture for the fiscal year, April 1, 1988 to March 31, 1989 was $2,719,000. Total expenditures were $2,525,880.00

Total Revenue for the 198 1989 fiscal year was $56,413.47.

The programs of the Department were carried out by 16 full time staff during 1989.

A detailed expenditure report of the department for fiscal year 1988/89 follows:

REPORT OF DEPARTMENT EXPENDITURES
April 1, 1988- March 31, 1989

Expenditures	Original Estimate	Actual Expenditure
FISHERIES ADMINISTRATION		
Administration	39,900	51,024.60
Equipment	10,000	23,920.18
Materials/Supplies	3,300	3,253.00
Professional Services	48,800	73,499.91
Salaries	238,900	247,046.28
Travel	29,600	30,090.92
TOTAL	370,500	428,834.89
EXTENSION		
Administration	1,000	1,153.25
Materials/Supplies	158,500	167,234.15
Professional Services	34,400	30,889.70
Salaries	99,300	92,723.75
Travel	20,900	22,573.57
P.E.I. Fishermen's Ass'n.	30,000	30,000.00
P.E.I. Seafood Processors	9,900	9,900.00
Travel Grant for Fishermen	6,500	9,806.75
Baitshed Program	18,000	5,000.00
TOTAL	378,500	369,281.17
RESOURCE UTILIZATION AND MARKETING		
Equipment		
Materials/Supplies	51,600	49,388.57
Professional Servs.	5,400	6,900.00
Salaries	232,400	231,974.38
Travel	30,000	42,304.45
Fresh Fish Market Assistance	40,000	6,287.25
Product Utilization	80,000	32,598.00
TOTAL	439,400	369,453.27

Expenditures	Original Estimate	Actual Expenditure
PROCESSING & QUALITY		
Equipment	65,000	42,636.23
Materials/Supplies	7,700	15,383.38
Salaries	99,500	96,398.15
Travel	17,700	28,697.70
Processors Fish Quality Dev't Program	275,000	258,973.56
TOTAL	464,900	442,089.02
AQUACULTURE		
Equipment	56,500	52,660.84
Materials/Supplies	21,600	26,074.84
Salaries	184,400	173,962.49
Travel	33,400	29,970.15
Malpeque Oyster Cultures Inc.	1,300	772.86
Shellfish Enhancement Program	130,000	110,033.64
TOTAL	427,200	393,474.82
FINANCIAL SERVICES		
Salaries	50,200	49,742.08
Travel	4,300	6,357.64
Commercial Fishermen's Investment Incentive	199,000	218,260.79
Fishermen's Capital Investment Fund	60,000	703.92
Fleet Development	325,000	247,682.46
TOTAL	638,500	522,746.89
GRAND TOTALS	**2,719,000**	**2,525,880.00**

REVENUE

April 1, 1988 - March 31, 1989

FISHERIES ADMINISTRATION		
E.R.D.A.	$ 30,000.00	$ 30,000.00
Miscellaneous	$ 3,659.28	$ 33,659.28
EXTENSION		
Miscellaneous	$ 2,410.10	$ 2,410.10
RESOURCE UTILIZATION		
Recoveries - Forgiveable Loans	$ 6,665.92	$ 6,665.92
PROCESSING/QUALITY		
Miscellaneous	$ 2,024.96	$ 2,024.96
AQUACULTURE		
Aquaculture Incentive Grant	$ 11,653.21	$11,653.21
TOTAL DEPARTMENT REVENUE		**$56,413.47**

PRINCE EDWARD ISLAND FISHERIES

The year 1989 has seen overall landings decrease by 2,228,367 lbs. compared to the 1988 recorded figures. Preliminary figures show 1989 landings of 124,417,442 lbs. The total landed value of all fishery products was $72.4 million, a decrease of 7.7% over the 1988 value.

The industry presently employs 7300 people; approximately 4,900 in fishing and 2400 in processing. Many more are employed in industries which support the fishery such as outfitting and vessel construction. It is estimated that in excess of $185 million was contributed to the P.E.I. economy in 1989 from the primary and secondary fisheries sectors and support industries.

Total groundfish landings in 1989 increased to 37.3 million lbs. representing a 22.8% increase from 1988. The value increased by 28.9% raising the value to $6 million. With respect to the dominant groundfish species, increases have been recorded in redfish and hake. Redfish landings increased by 64.9% raising the landings from 12.6 million lbs. in 1988 to 20.7 million lbs. in 1989. Hake landings increased by 19.6% raising the landings from 3.3 million lbs. in 1988 to 3.9 million lbs. in 1989. The total value increased by 43.6%. Cod landings decreased by 4.6%, from 8.5 million lbs. in 1988 to 8.1 million lbs. in 1989. The value, however, increased by 27.3%. Landings of all flatfish, which include greysole, yellowtails, blackbacks and flounder, have decreased by 4% while the value decreased by 23.7%.

Landings of all pelagic and estuarial fish decreased to 18.1 million pounds, down from 29.2 million pounds in 1988, representing a decrease of 38%. The value of these landings decreased by 30.9% to $3 million. Mackerel landings increased by 37.8% while their value increased by 37.7%. Herring landings decreased by 58.1% with a decrease in value of 67.4%. Eel landings decreased from 341,954 lbs. in 1988 to 236,190 lbs. in 1989. The value of these landings decreased by 38.4%, lowering the value to $295 thousand. Smelt landings decreased by 30.7% while their value increased by 3.4%. Silverside landings decreased from 172,554 lbs. to 80,629 lbs. Tuna landings decreased by 0.5% with a recorded landing of 136,775 lbs.

Total mollusc and crustacean landings increased by 7.2% rising from 33.9 million lbs. in 1988 to 36.3 million lbs. in 1989. The value of these landings decreased by 9.9% from $66.7 million in 1988 to $60.1 million in 1989. Lobster landings decreased by 3.4% with a decrease in value of 17.9%. Bar clam and quahaug landings showed increases of 1.9% and 61.3% respectively. Rock crab landings decreased from 1,341,629 lbs. in 1988 to 999,113 lbs. in 1989. Oyster and snow crab landings increased

this year by 29.5% and 26.1% respectively. The value of oysters in 1989 rose to $3.8 million and the value of snow crab remained the same at $2.4 million.

Seaplant landings decreased by 475 thousand pounds to 32.7 million lbs. for 1989, however, the value increased by 24.3% giving a total value of $3.3 million.

The landed weight and value for fish and seaplants in P.E.I. in 1989 with comparative figures for 1988 are as follows:

P.E.I. FISH LANDINGS AND VALUES
1988-1989

SPECIES	1988		1989*	
Groundfish	**Pounds**	**Value $000**	**Pounds**	**Value $000**
Cod	8,514,542	$ 1,277	8,125,609	$ 1,625
Hake	3,283,211	328	3,926,165	471
Flounder	2,641,604	925	2,110,743	633
Blackback	1,143,408	400	1,561,567	390
Greysole	15,077	10	17,638	3.5
Yellowtail	58,835	15	14,222	3.5
Redfish	12,580,321	1,635	20,749,414	2,801
Halibut	2,093	4	3,487	3
Haddock	--	--	15,034	6
Pollock	7,400	1	77,898	15
Tomcod	34,288	7	13,611	3
Fishmeal	2,102,656	21	684,600	6
TOTAL	**30,383,435**	**$4,623**	**37,299,988**	**$ 5,960.0**
Pelagic				
Tuna	137,431	$ 807	136,775	820
Mackerel	5,524,421	663	7,610,934	913
Herring	21,723,050	1,955	9,105,599	637
Gaspereaux	500,132	100	389,047	78
Eel	341,954	479	236,190	295
Smelt	785,182	236	543,835	244
Silverside	172,554	34.5	80,629	12
Salmon	836	2.5	652	2
Trout	30,000	67.5	--	--
Animal Feed	850	--	--	--
TOTAL	**29,216,410**	**$ 4,344.5**	**18,103,661**	**3,001.0**

SPECIES	1988		1989*	
	Pounds	Value	Pounds	Value
Shellfish				
Lobster	21,995,133	$56,129	21,252,284	$46,058
Bar Clam	924,848	277.5	942,413	377
S.S. Clam	474,871	380	388,770	311
Quahaug	1,056,407	845	1,704,325	1,533
Scallop	231,400	1,157	262,403	1,180
Mussel	3,176,931	2,383	4,760,032	4,284
Oyster	3,221,265	2,899	4,170,287	3,753
Snow Crab	1,481,303	2,407	1,867,470	2,427
Rock Crab	1,341,629	268	999,113	200
TOTAL	**33,903,787**	**$66,745.5**	**36,347,097**	**$60,123**
TOTAL FISH	**93,503,632**	**$75,713.0**	**91,750,746**	**$69,084**
MARINE PLANTS	**33,142,177**	**$ 2,628.0**	**32,666,696**	**3,266**
TOTAL FISHERY PRODUCTS	**126,645,809**	**$78,341.0**	**124,417,442**	**$72,350**

* Preliminary

The following table shows the comparisons for P.E.I.'s landings and values, by species groups, over the period 1970 - 1989.

PRINCE EDWARD ISLAND, 1970-1989
Landings, Quantity and Values by Species Group
(In thousands of lbs. and thousands of dollars)

		Groundfish	Pelagic & Estuarial	Molluscs & Crustaceans	Marine Plants	Seafish Total Excluding Marine Plants	Total
1970	Q.	33,668	54,853	11,837	67,004	100,358	Q.167,360
	V.	1,353	928	7,298	1,558	9,579	V. 11,167
1971	Q.	39,440	47,012	11,047	50,764	97,499	Q.148,263
	V.	1,635	968	6,822	937	9,425	V. 10,361
1972	Q.	37,650	9,711	9,226	30,028	56,587	Q. 86,615
	V.	1,693	522	7,293	581	9,508	V. 10,089
1973	Q.	38,510	14,014	10,325	49,123	62,850	Q.111,973
	V.	2,132	899	8,209	1,172	11,241	V. 12,414
1974	Q.	17,083	9,667	8,830	76,036	35,661	Q.111,617
	V.	1,087	788	6,995	3,106	8,870	V. 11,977
1975	Q.	15,032	5,529	11,352	40,318	31,914	Q. 72,232
	V.	1,058	670	9,078	1,610	10,806	V. 12,416
1976	Q.	14,972	6,998	11,263	28,843	33,233	Q. 62,075
	V.	1,091	1,077	9,673	878	11,841	V. 12,719
1977	Q.	22,454	5,548	11,849	30,116	39,851	Q. 69,967
	V.	2,137	1,156	10,786	1,085	14,078	V. 15,164
1978	Q.	28,248	8,850	15,307	31,709	52,905	Q. 84,614
	V.	3,154	1,605	17,928	1,873	22,697	V. 24,560
1979	Q.	33,995	10,581	16,716	42,943	61,273	Q.104,216
	V.	4,300	1,898	20,259	2,689	26,457	V. 29,146
1980	Q.	42,252	1,238	16,475	35,225	70,966	Q.106,191
	V.	4,672	2,302	18,037	1,781	25,011	V. 26,792
1981	Q.	45,144	14,035	17,568	37,485	76,747	Q.114,231
	V.	5,413	2,309	22,258	1,874	29,982	V. 31,856
1982	Q.	42,223	18,046	18,672	34,043	78,942	Q.112,986
	V.	4,823	2,524	26,379	1,702	33,726	V. 35,428
1983	Q.	45,039	20,736	21,955	28,709	87,730	Q.116,439
	V.	4,883	3,539	34,365	1,435	42,787	V. 44,222
1984	Q.	41,646	15,581	21,579	34,724	78,806	Q.113,585
	V.	4,461	3,262	28,323	1,736	36,046	V. 37,821
1985	Q.	34,247	20,280	26,580	38,402	81,107	Q.119,509
	V.	4,823	3,639	40,905	2,496	49,366	V. 51,863
1986	Q.	30,116	33,880	31,435	27,785	95,431	Q.123,216
	V.	5,587	4,812	54,999	1,806	65,398	V. 67,204
1987	Q.	28,366	33,988	29,830	30,586	92,183	Q.122,770
	V.	7,512	4,916	58,421	2,141	70,848	V. 72,989
1988	Q.	30,383	29,216	33,904	33,142	93,504	Q.126,646
	V.	4,624	4,344	66,746	2,628	75,714	V. 78,342
1989*	Q.	37,300	18,104	36,347	32,667	91,751	Q.124,417
	V.	5,960	3,001	60,123	3,266	69,084	V. 72,350

* Preliminary

COMMERCIAL FISHERIES BRANCH

Lewie Creed, Director

The Commercial Fisheries Branch is responsible for carrying out a full range of programs and services for P.E.I. fishermen and processors. The Branch includes the three Divisions of Extension, Resource Utilization, and Processing and Quality.

The Director is also responsible for ongoing liaison with the Department of Fisheries and Oceans and provides support services on issues addressed by the Federal Provincial Atlantic Fisheries Committee and the Atlantic Council of Fisheries Ministers. As well, the Director coordinates the Department's interface with other Provincial Departments and Agencies.

CANADA/P.E.I. COOPERATION AGREEMENT ON FISHERIES DEVELOPMENT

In October 1989, a five year $10.6 million Cooperation Agreement on Fisheries Development was signed between the Government of Canada and the Government of Prince Edward Island. The Agreement covers the period April 1, 1989 to March 31, 1994 and calls for $7.5 million in development expenditures by the Department of Fisheries and Oceans and a total of $3.1 million in development expenditures by the P.E.I. Department of Fisheries and Aquaculture.

The Director provided support services to the Management Committee which was formed to implement programs under the Agreement. Membership on the Management Committee consists of the Director-General and a representative of the Atlantic Canada Opportunities Agency, representing the Federal Government, the Deputy Minister, P.E.I. Department of Fisheries and Aquaculture and a representative of the P.E.I. Executive Council Office representing the Province. The Committee regularly reviews programs and projects to be implemented under the Agreement and prepares reports for Ministers on activities undertaken.

The Director also co-chairs the Agreement Coordinating Committee with the P.E.I. Area Manager, Department of Fisheries and Oceans. The Coordinating Committee reports to the Management Committee and is responsible for the day to day operation of the Agreement.

A detailed report on the activities of each Division follows.

EXTENSION DIVISION

Friend Herring - Manager
Rory McLellan - Extension Specialist

The Extension Division is the communications function of the P.E.I. Department of Fisheries and Aquaculture. The Division acts as the bridge between the Department and the fishing industry, the media and the general public.

The primary function of the Division is to liaise with fishermen, and their organizations to foster port, industry and community development. To this end, the Division organizes port meetings, sponsors training courses, technical upgrading tours and publishes news releases, brochures and other printed matter.

The Division is essential to the Department as the means of obtaining feedback and input from the fishing industry. Input from fishermen, processors, aquaculturists and others, is essential to develop sound policies and programs.

During 1989, Friend Herring continued to be the Department's contact to the western ports of the Province and was available Thursdays at the Regional Service Centre in Summerside in the mornings and at the West Prince Regional Service Centre in the afternoons. Rory McLellan is responsible for eastern harbours and maintains office hours at the Montague Service Centre on Tuesday afternoons and Souris on Wednesday afternoons.

FISHERMEN'S INFORMATION SERVICE

A number of information programs were organized or continued and carried out by the Extension Division during the year. These included:

Radio Broadcasts

A weekly five minute radio broadcast covering fish prices and markets was produced by the Division during the period May 19 - November 10, 1989. The program was aired on radio stations CFCY, CHTN and CJRW on weekends. Several local newspapers and one Maritime bimonthly fisheries magazine also carried this information.

Booth Displays

Display booths were placed at major fairs and exhibitions held throughout P.E.I. during the summer months. The purpose of the displays was to increase and promote general awareness of the P.E.I. fishing industry and the role of the Department.

Summer employees Denise Rogerson, Melanie MacPhee and Brent MacKinnon were responsible for assembling the displays and supervising the operation at the various events. Displays were placed at Souris Regatta, Tignish Irish Moss Festival, Souris Trade Show, Summerside Lobster Carnival, Brackley Day, Northumberland Fisheries Festival, Tyne Valley Oyster Festival and the Kensington Harvest Festival.

In 1989 the Division saw the completion of a new full color booth display. Fifteen thousand dollars was invested in this project which depicts aquaculture with emphasis on mussels, trout and oysters and the traditional fishery featuring groundfish, lobster and herring roe. This bilingual display measures 15 feet wide by 8 feet high, is lighted and is a high profile presentation of our diverse fishery.

Three events of special note were the Souris Regatta and the Northumberland Fisheries Festival where the Division sponsored prizes and the St. Lawrence Scallop Festival where the Division sponsored prizes and helped to judge the competition.

On March 8th, and 9th, the Seventh Marine Diesel and Electronics Show was held at West Prince Centre, Elmsdale, where the Department assisted Mary Lou Rogers of Holland College to organize more than 30 exhibitors. More than 500 fishermen and people interested in marine equipment attended the show, which included survival rafts and suits, diesel engines, fishing gear, supplies, and fish handling containers. Plans are for an even bigger and better show and conference in 1990.

Publications

The Extension Division continued the popular promotion button with the logo "Serve P.E.I. Fish-It's Catching".

The Extension Division revised and updated a number of species information pamphlets on lobster, cod, scallop, oysters, soft-shell clams, mackerel and Irish moss.

In addition to regular literature, the Division designed and printed a new publication entitled "Island Marine Life... off our shore" This new handbook depicts most major species of fish, and seaweeds that can be found here on the Island and was intended primarily for children as a guide to beachcombing.

The Division assisted in the development and printing of "The Fishing and Aquaculture Industry of Prince Edward Island", which is a brief description of all aspects of the fishery.

A number of news releases on projects and programs of the Department were provided to local news media and national trade journals. Promotional advertisements were also prepared for a number of local, regional and national publications.

TECHNICAL UPGRADING TOURS

On March 16, the Division sponsored a technical upgrading tour to the Maine Fishermen's Forum at Rockland, Maine. Six participants from fishermen's organizations on the Island were selected by their groups to attend this two day event.

This was a large conference with in excess of 1000 fishermen in attendance. Topics ranged from the proposed U.S. carapace size increase, to safety requirements and the Free Trade Agreement. Island fishermen were asked to address this gathering and spoke for over an hour in an animated question and answer session.

As a result of this tour a group of fishermen from Maine will visit P.E.I. in May 1990. Despite significant differences between the U.S. and Canada in the fishery, the Division continues to support other opportunities to foster mutual understanding.

FILMS

The video "The Island Fishery" was a two year project completed by the Division in 1989. This was filmed entirely on P.E.I. and details highlights of various types of fishing, most species and many fishing methods.

The video was designed primarily as an educational aid and will be used with other films, slide shows and brochures for presentation to schools, or the public upon request.

TRAINING COURSES

The Division continues its commitment to training courses, particularly those involving marine safety.

In November, of 1988, the Division sent a brochure to every Island fisherman to determine interest in winter training courses. Many fishermen expressed interest in welding courses and three, 30 hour courses were offered at the West Prince Centre, Montague Regional High and Souris Regional High. Instructors and materials were purchased from the school units or from Holland College. Forty-one fishermen successfully completed these welding courses.

A number of fishing families received 50% assistance towards the training costs of the Holland College "Introduction to Computers" course.

The Division also sponsored five full day bookkeeping courses at Alberton, Souris, Malpeque, North Lake and Murray Harbour. Approximately fifty fishermen and their wives attended these courses.

In co-operation with St. John Ambulance, the Division sponsored two day C.P.R. and first aid courses at Naufrage, Alberton, West Point, Murray Harbour, Malpeque and North Lake. These were attended by over seventy fishermen and their wives who received life-saving certificates.

In addition to regularly scheduled courses the Division continues to assist individual fishermen who wish to upgrade their navigation skill at Holland College Marine Centre.

SCHOOL PRESENTATIONS

Each year Elementary and Secondary schools on P.E.I. are requesting more fisheries information and in-class demonstrations. There has also been an increase in requests for information from schools on the mainland. In 1989, the Division, made presentations at Kinkora High School, Souris Consolidated School, Tracadie Elementary School, Lucy Maude Montgomery School, East Wiltshire School, Glen Stewart School, Stonepark Junior High School and a special presentation on communications at Holland College, Summerside Center. Together, these presentations were attended by over 350 students with additional material being provided for study by other school classes.

In addition to the "in class" demonstrations, the Division responded to over 150 written requests for materials from teachers, university students, technical colleges, high school and elementary students.

PORT MAINTENANCE

During the year 1989, the Department transferred responsibility for minor electrical maintenance and power consumption costs at fishing ports or shore sites owned by the Department of Fisheries and Oceans. As of June, these electrical services became the responsibility of the Harbours and Infrastructure Branch of Fisheries and Oceans.

The province is now responsible primarily for shellfish park sites at Lower Bedeque (3), Hickeys Wharf (2), York Point and a new installation at Ten Mile House. The total number of electrical services now number sixteen with the result that the budget for this program has been reduced.

Work continued on concrete slab haul-out repairs and/or extensions at Mount Stewart, Ten Mile House and Waterside. Depending on final discussions with shellfish harvesters, more 10 foot concrete slabs may be fabricated to upgrading aquaculture shore facilities.

Unsafe planks and several wash outs at Brush Wharf (Orwell Cove) were repaired by a contractor this spring. Several Charlottetown lobster fishermen were jointly assisted by this Department and Transport Canada to supply and install a steel pile to secure two floating wharf structures, thus giving safe moorage for their vessels. Landfill was provided at Naufrage to improve a building site which the fishermen acquired. A water drainage problem at the York Point Park was corrected with the installation of two separate underground drains which will carry troublesome surface water away to the shore. Other port improvements were carried out at Red Head Harbour, (removal of abandoned fishing vessels), Howard's Cove (emergency electrical repair), a baitshed drainage problem at Georgetown and Milligans Wharf, and an electrical motor repair at Brae Harbour.

Since 1983, the Extension Division has helped coordinate the Port Custodian, or Night Watchman Program, to major P.E.I. fishing ports. The Department of Health and Social Services hire and pay their clients through a job creation initiative to carry out periodic checks on property and vessels throughout the fishing season. Approximately 650 people have been employed as custodians since this program first began although the yearly totals are decreasing because of budget restraints. The port committee members supervise these workers and administer the bimonthly reports.

This year the Women in Support of Fishing organized a museum and information centre for the Irish Moss Fishery and located it at the Fisheries and Oceans property in Miminegash. A fishing boat became the center piece for this display and several local students were employed to staff the facility.

The Department provided a small grant towards the boat renovation costs.

NEW PORT SERVICE

Safe disposal of waste oil from boat engines is an increasing problem. Negotiations with a Tignish construction company are nearing completion to provide environmentally safe containers at the ports which can be used by the fishermen for disposal. The company will provide the pump out "when needed" as a free service to the community. Local Harbour Managers will supervise the daily activities and report when the containers are to be drained. The waste oil will be used as a fuel for a furnace on the company's work site.

FISHERMEN'S HOLDING FACILITIES

A Fishermen's Holding Facilities or Baitshed Program was reinstated during the fiscal year 1984-85. This program provides 75% of the material costs required to construct new fishermen's holding or storage units. The maximum grant is $1,000 per unit on new construction or $600 per unit for up-grading existing holding units, when feasible. There is a restriction of limiting financial assistance to once only per fisherman.

Financial assistance during the past five fiscal years is reported in the following table, expressed as numbers of bait shed units.

PORT	FISCAL YEAR 84/85	85/86	86/87	87/88	88/89	89/90
Beach Point	2	2	-	3	-	-
Cape Egmont	-	-	-	2	-	-
French River	1	-	1	-	-	2
Georgetown	-	3	-	-	-	-
Grahams Pond	-	-	1	-	-	-
Higgins Wharf	1	1	2	-	-	-
Launching	1	-	1	-	2	-
Lower Montague	-	-	1	-	-	-
Montague	-	-	-	2	-	-
Malpeque	2	5	-	-	-	-
Darnley	1	2	-	-	-	-
Milligans Wharf	-	1	4	1	-	-
Miminegash	-	-	-	8	-	2
Mink River	-	-	1	-	-	1
Naufrage	-	3	2	-	1	3
North Lake	1	-	-	-	-	-
Red Head (Morell)	-	-	1	-	-	-
Rustico Harbour	1	-	-	-	-	-
Skinners Pond	-	-	-	-	1	-
Souris	-	-	4	-	1	-
Summerside	1	1	-	1	-	-
Tignish	-	-	-	-	-	16
Tracadie	-	-	-	-	-	1
Victoria	1	-	-	-	-	-
Wood Islands	-	-	-	-	-	1
YEARLY TOTALS	12 New Units +1 Renov.	18	18	17	5	26

SPECIAL MEETINGS

The Division, in cooperation with the P.E.I. Workers Compensation Board held a series of special meetings to discuss workers compensation for fishermen. The meetings took place at nine locations from Tignish to Souris over a one week period.

The compensation plan was presented to fishermen as a group self-insurance proposal whereby the premiums would be dependent on the claims and the number of fishermen participating. To date 30 fishermen and their crew have decided to insure themselves through workers compensation. The Compensation Board will continue to encourage fishermen to join this plan by a mailout in 1990.

BOY SCOUT JAMBOREE

During July of 1989 a successful Jamboree was held at Fort Amherst National Park where more than 10,000 boys, girls and leaders enjoyed excellent weather and activities.

The Department co-operated with Professor Jerry Johnson from the Atlantic Veterinary College to display local live fish in large tanks.

The Department also shared in the cost of a Teli-graphic machine programed for the P.E.I. fishery and tourist attractions. The booth at the "Canada Place" marquee was capably staffed by Ms. Denise Rogerson who also made early morning deliveries of a varied number of fish species used on the grounds for special promotions. Thousands of information sheets on fish the Island and fish recipes were given to these eager and interested visitors. Each evening 500 overnight campers at Fergusons Point were treated to fresh oysters and a lobster fishing demonstration by Extension Division Staff and area fishermen, Victor MacFadyen and brothers Bill and Oliver Murley.

By all reports "The Jamboree was a great success and the Departments contribution in no small way added to the success."

MOBILE BOAT HOIST

In the 1980's the Department assisted more than 20 fishermen obtain larger vessels. These vessels, known as the mid-shore fleet, are located at various Island ports and have requirements above and beyond those of traditional Island vessels. One such requirement is the need for equipment larger than the traditional boat hauler to remove them from the water. The Department undertook to provide a large, mobile, boat hoist for use at the port of Souris, where many of these larger vessels are based.

Prior to the purchase of the mobile unit, the Extension Division researched various types of boat hoists, including their capabilities, operating costs and purchase prices.

Once the requirements were finalized, a tender package was issued and a 35-ton capacity, mobile boat hoist was purchased.

In July of 1989, this hoist became fully operational. The Division successfully negotiated a management contract with a fishermens group elected by fishermen at the port of Souris. The hoist has operated very successfully with over 40 vessels of all sizes being removed from the water for repairs and maintenance or over winter storage.

MARINE MAMMAL REMOVAL PROGRAM

It has been the Department's responsibility to remove and dispose of stranded marine mammals from Island shore locations since 1973. This year was no exception as a total of fifteen seals (including one large male grey) and five dolphins were transported from more than ten beach sites primary along the Northumberland Strait area.

Two teenaged sperm whales did not survive a six whale stranding at Covehead this fall and had to be transported away and buried at sites in Stanhope and Hamilton. Both carcasses are to be retrieved sometime in the future by the Museum of New Brunswick and Ripleys Believe It Or Not, for display purposes.

Whenever a stranding occurs, Professor Pierre-Yves Daoust, is notified and usually he and his Atlantic Veterinary College students perform a necropsy on the animal to learn as much as possible about the physical condition and cause for the sea mammals dilemma. Co-operation and interest from the Atlantic Veterinary College is excellent and the Department has agreed to do everything possible to make any future strandings accessible for necropsy work to be done at the site under the most suitable conditions.

The Museum of New Brunswick have representatives in Prince Edward Island who will remove some small carcasses, such as seals, from shore sites to obtain skeletons for the Museum for display purposes. This initiative will save the Department some of the expenses associated with mammal removal.

Marine Safety

The Division represents the Department on the Canadian Marine Advisory Committee, a National body which meets in Ottawa each May and November, and on the Regional Marine Advisory Committee which meets four times a year at various times and locations throughout the Maritimes.

In 1989 both committees were considering "Proposed Small Fishing Vessel Safety Regulations" a comprehensive document pertaining to all aspects of vessel design, construction and safety requirements onboard fishing vessels.

These voluminous documents were studied by staff of the Division and, in February, public meetings were held throughout the Maritimes to discuss the provisions of the proposed new regulations and their impact on the fishing fleet. The meeting in Charlottetown was attended by over 200 P.E.I. fishermen, who were informed, concerned and were able to state their views. While these proposed regulations continue to be discussed at this printing, there can be certainty that P.E.I. fishermen will have an impact on the final report.

GENERAL

Staff of the Extension Division represented the Department on various industry committees including: the District 7B, 7B1 and 8 Scallop Advisory Committees, the District 7B, 7B1 and 8 Lobster Advisory Committees, the Seaplants Advisory Committee, and the Ad Hoc Fisheries Training Committee.

Division staff also represent the Department on the Atlantic Bluefin Tuna Advisory Committee which develops management proposals on an annual basis for consideration and approval by the Federal Minister of Fisheries and Oceans.

RESOURCE UTILIZATION DIVISION

David Younker - Manager
David Gillis - Biologist, Gerry Ridgeway - Economist
Shelley Murphy - Home Economist (Acting)
Barbara Williams - Statistics and Market Information

The Resource Utilization Division represents the interests of the P.E.I. fishery in management consultations carried out with the Federal government to develop fishing plans for various fish species. This Division promotes the maximum utilization of P.E.I. fishery resources, provides services to co-ordinate raw material supply with market demand and develops and maintains statistical and market information to support the objectives of the Department.

Major objectives of the Division are:

- To develop a data base and to carry out social, economic and biological assessments in order to effectively represent P.E.I. in the management consultations carried out by Federal Fisheries and Oceans.

- To provide a service to the industry in test marketing new products.

- To provide market intelligence to the P.E.I. fishing industry.

- To promote the consumption of fish products both locally and outside the Province.

- To work with the fishing industry and other related Departments in developing new products for expansion and modernization of processing capability in order to increase the value of P.E.I. fisheries resources.

A brief description of the programs, projects and activities carried out by the Resource Utilization Division during 1989 is as follows:

MANAGEMENT

Staff of the Division continued to represent the Department on a number of species' Advisory Committees and issues' Working Groups. During 1989 such committees included those dealing with Atlantic Groundfish, Gulf Groundfish, Gulf Snow Crab, Northern Shrimp and Small Pelagics (herring and mackerel). Working Groups active in the last year included the Canada - France Advisory Working Group, the Licensing Review Working Group and the Enterprise Allocation (E.A.) Working Group. These Committees and Working Groups provide a forum through which the Minister of

Fisheries and Oceans seeks advice from the fishing industry and the Provinces on the management of the various fisheries. Provincial representation in this process ensures that the interests of the Province in fisheries management issues are heard and maintains a vital flow of information to Provincial interests concerning the general state of the Canadian and world fisheries.

To ensure effective Provincial representation at the National and regional level, the collection and delivery of information required is facilitated through a series of local species' Advisory and Working Groups and through personal contact with the P.E.I. industry on an ongoing basis.

The following brief overview summarizes some of the fishery management issues which were addressed during the 1989.

(a) **Groundfish**

The experimental Enterprise Allocation (E.A.) program for 50' to 65' mobile gear vessels in the southern Gulf was introduced for the 1989 season. The Province continues to closely monitor this experiment which has required new fleet control and monitoring systems to be developed.

The shortage of basic allocation of Atlantic cod for the smaller mobile gear fleets in the southern Gulf continues to be a major concern. While the biomass of the stock continues to increase, individual growth rates of cod remain the slowest on the Atlantic Coast. The fixed gear sector continued to experience difficulty in utilizing a significant portion of its allocation in 1989.

The Gulf redfish fishery in 1989 was characterized by the full entry of a large yearclass of young fish, which significantly decreased the average size of fish landed . Efforts were again directed at maintaining redfish allocations to the Gulf Plant Delivery Program so that resource short plants and their workers might continue to benefit from this growing program. The Province also monitored discussions concerning the migration of Gulf redfish out of the Gulf in winter and is awaiting scientific advice pending in the matter.

After some years of concern by P.E.I. fishermen in particular, a working group has been struck to consider management measures to protect the white hake resource in the southern Gulf from further decline.

(b) **Snow Crab**

The 1989 fishery for snow crab in the south-western Gulf, including the P.E.I. zone, had to be closed prematurely due to deteriorating quantity and quality of landings as the season

progressed. Measures to stem further erosion of this fishery and permit a rebuilding of the resource have preoccupied local and regional snow crab management committees during 1989. The Province's snow crab industry continues to fight to protect equitable access for P.E.I. vessels to this valuable fishery.

(c) Rock Crab

A P.E.I. Rock Crab Advisory Committee was formed by D.F.O. during 1989. Ten new permits were issued on P.E.I. for the 1989 season, however, the general condition of the crab meat market depressed prices and made attracting buyers difficult. The Department employed a sampling technician on vessels during the lobster and rock crab fisheries to study and document characteristics of rock crab. Catches in the by-catch (to lobster) and directed rock crab fisheries in all parts of P.E.I. were surveyed. Results will be used to facilitate the development of this growing fishery.

(d) Herring

In the spring, Island fishermen landed 513 tonnes of herring which was used for bait and for producing smoked bloater herring products.

The fall herring are primarily exploited for roe which is sold to the Japanese. This fishery is managed by using seven zones with fishermen in the eastern Northumberland Strait having had access to 10,000 tonnes of herring in the Fishermens Bank zone in 1989 and the option to apply to harvest 1,000 tonnes in an adjacent zone (Pictou Island). During 1989, P.E.I. fishermen harvested 2,955 tonnes of herring in the Fishermens Bank zone, and 355 tonnes in the Pictou Island zone.

Fishermen in the western Northumberland Strait have mobility to fish two zones. The quota in the Western Prince Edward Island zone was 2,100 tonnes, and in the Escuminac zone it was 900 tonnes. A total of 228 tonnes of herring were landed by Island fishermen in the Western Strait, in the 1989 fall fishery.

(f) Mackerel

In 1989, a total of 7.6 million pounds of mackerel were landed in Island ports. During the summer months, mackerel can be afflicted with redfeed which causes the flesh to deteriorate quickly if not handled properly.

Higher harvesting costs vis-a-vis other producing nations makes it difficult to fully utilize the resource. Despite these obstacles the mackerel fishery plays an important role in the incomes of inshore fishermen, and in the lobster fishery where mackerel is used for bait.

(g) **General**

The Province continues to monitor the effects of recent changes in Federal policy on licensing and to deliver its views through participation in the Licensing Working Group. Similarly, Provincial input on E.A. management programs continues.

TEST PRODUCTION/PRODUCT UTILIZATION

Projects during the year focused on herring, dogfish and sea urchins.

(i) Herring - A project was entered into with Keeping and MacKay to purchase a herring filleting machine for their processing facility for the production of fillets for the European market.

(ii) Dogfish Resource Sampling and Processing Demonstration - In response to the growing presence of dogfish shark in P.E.I. waters, Division staff initiated a sea sampling program to quantify the characteristics of this resource. Contacts were made with both U.S. and Canadian - based processors to discuss product specifications and market conditions. An experienced dogfish processing technician was brought in from southern Nova Scotia to demonstrate the proper processing of this fish. Portions of dogfish so produced were tested by the Division's Home Economist in a number of preparations. Efforts will be continued to assist the industry in utilizing this resource in 1990.

(iii) Sea Urchin Conditioning Trials - Following an initial assessment of the potential for a sea urchin fishery on P.E.I., an experimental harvest and condition project was completed in the fall of 1989. Urchins were held at a local lobster pound for 7 weeks under a variety of densities and feeding regimens. Yield and color of roe, mortality, feeding rates and a series of standard environmental data were collected. Analysis of the results of this experiment and other information collected during the year will help determine the future course of development for this resource.

(iv) Smoked Herring - Egmont Bay Seafoods conducted a pilot project to determine the suitability of smoking fall herring. A quantity of round herring was purchased from each of the eastern and western regions of the province. The herring was smoked using methods common throughout the smoking industry.

Fall herring in Prince Edward Island has a high fat content due to an abundant supply of food during the summer months. This project enabled the operator to assess the method used and make the adjustments where necessary.

PROMOTION

Retail Trade

A seminar, sponsored by the division, was held for seafood retailers from across P.E.I. A variety of topics were covered, including; retailing live lobster and trout, precautions in the shellfish industry, proper sanitation to reduce spoilage and successful selling.

The "Seafood Bulletin", a quarterly newsletter for seafood retailers on P.E.I. is published and distributed to sixty five retailers. The purpose of the newsletter is to keep retailers up to date on what is happening in the fishing industry.

TRADE SHOWS

(a) **Canadian Food and Beverage '89 and Hostex '89**

The Department of Fisheries and Aquaculture assisted the P.E.I. Development Agency in staffing a booth at the Canadian Food and Beverage and Hostex foodservice shows in Toronto. At both shows, samples of mussels and promotional materials were passed out. A great deal of support for the "Island Blues" was shown by the restaurant industry.

(b) **Apex '89**

The P.E.I. Department of Fisheries and Aquaculture in conjunction with the Nova Scotia and New Brunswick Departments of Fisheries staffed a Maritime fisheries booth which promoted June Seafood Days.

(c) **VIVA '89**

One of Canada's largest "Consumer" shows, "VIVA", takes place each year in Vancouver. At the '89 show in April, the Department assisted Julie Watson, well known cookbook author, to attend and to demonstrate "Island Blue" mussel recipes.

(d) **Royal Winter Fair**

In co-operation with the P.E.I. Potato Marketing Commission, the Department of Fisheries and Aquaculture attended this show in Toronto. Mussels were demonstrated and well received by the visiting public.

SEAFOOD AWARENESS

(a) **Seafood Barbecues**

The "Out of the Sea and Over The Coals" barbecue promotion program was carried out in National, provincial and private campgrounds from June to September. Two summer students were employed to travel to the campgrounds and conduct demonstrations which concentrated on how to barbecue seafood. Approximately 2500 people attended these demonstration throughout the summer.

In addition to the campground demonstrations, summer staff also participated in a number of fishery festivals that were held across the province. The major fishery festivals attended include; Northumberland Fisheries Festival, St. Lawrence Scallop Festival and the Georgetown Regatta.

(b) **Car Ferry Displays**

One summer student was hired to set up a display booth on the car ferries "M.V. Confederation" and "M.V. Abegweit". During the crossings the preparation of seafood dishes was demonstrated, samples were distributed and information was provided on P.E.I. seafood.

(c) **Canadian Seafood Advisory Council**

The Department is a member of this National organization which consists primarily of members of the seafood industry. The Canadian Seafood Advisory Council is responsible for coordinating national promotions of seafood.

(d) **Seafood Demonstrations/Displays**

(i) Instore Demonstrations - a series of instore demonstrations were carried out during the month of June. A variety of seafoods were prepared with samples and recipe brochures distributed.

In October, lobster demonstrations were conducted at various stores in Summerside and Charlottetown.

(ii) Booth Demonstrations - a summer employee carried out seafood cooking demonstrations in conjunction with the general fisheries booth that the Extension Division of the Department placed at major Island festivals.

(iii) Special Events - Special displays were set up for events such as the Westisle Marine Show, Rainbow Valley Fisheries Day, Culinary Masters, Rotar-act Celebrity Cook-off and November Seafood Month.

(iv) Mussel Promotion - To gain increased exposure for "Island Blue" cultured mussels, efforts were made to feature mussels at provincial, national and international gatherings. Mussels were provided upon request to groups on a cost sharing basis.

(v) Seafood Fest - An institutional promotion, "Seafood Fest", was held during the month of October. Seafood displays, consisting of posters, brochures and a contest, were set up at each participating institution.

(vi) Canada Games - In August, the Department of Fisheries and Aquaculture assisted the 1991 Canada Games Host Committee in featuring a P.E.I. Day and reception at the 1989 Games in Saskatoon.

(vii) Culinary Masters - The 1989 Culinary Masters was the first international culinary competition ever held in Atlantic Canada. The Department participated by donating seafood for this event which is to become an annual competition.

(e) **Promotional Material**

(i) This Week on P.E.I. - In co-operation with P.E.I. seafood retailers, a full color, two page advertisement was inserted in the "This Week on P.E.I." publication. The ad featured a color photograph of Island seafoods and a listing showing the location of the thirty-six participating retail establishments.

(ii) Restaurant Menu Book - In co-operation with the P.E.I. Department of Agriculture, a full page color advertisement was placed in the Island Restaurant Menu Book. Approximately 50,000 copies of the book were distributed across P.E.I.

(iii) Seafood Bounty slide presentation - The fisheries slide presentation "Seafood Bounty" was updated and made into a video. Both the slide presentation and the video were made available on loan to community and church groups for use at meetings.

(iv) Mackerel brochure - A brochure was produced containing recipes and information on how to buy, store, fillet and prepare P.E.I. mackerel.

(v) Seafood Sensation Vol. III - The third volume of "Seafood Sensation" was prepared using a variety of P.E.I. seafoods. This booklet features thirty-two seafood recipes and is available to the public.

(vi) Bay Scallop recipe cards - Recipe cards on bay scallops were produced and made available to bay scallop growers for distribution with their product.

(vii) General - an assortment of promotional materials, including brochures, posters, hanging mobiles, pins, aprons and stickers were reprinted and used in an effort to gain increased exposure for seafoods. These materials were distributed in response to numerous requests from retailers, consumers and educators.

(f) **Advertising**

Advertisements on the variety and availability of Island seafoods were placed in newspapers and magazines throughout the year and regular consumer articles were inserted in a local paper on a bimonthly basis.

Through the "Telegraphics Computer Terminals" set up at strategic locations on P.E.I. information was made available to the public on the dates for fishery festivals and locations of barbecue demonstrations.

(g) **June Seafood Days**

For the second year, the three Maritime provinces joined in a seafood promotion. During the month of June, various promotional activities took place under the "Seafood Forever" theme.

To launch the promotion, teams from each of the three Maritime provinces were challenged to prepare the most tempting seafood picnic basket.The teams, captained by their respective Minister of Fisheries, included a representative from the media and the fishing industry. On June 2, a giant cook-off that was well attended by the public and the media was held at the Amherst Tourist Bureau.

In support of the promotion, a new brochure featuring picnic recipes was developed. For the foodservice industry, posters, tabletents, recipes and placemats were made available. Posters and recipes were also available for seafood retailers.

A number of instore demonstrations were held during the month and a recipe contest was carried out through the newspapers.

(h) November Seafood Month

For the twelfth year, November has been designated as Seafood Month in Canada. The Canadian Seafood Advisory Council (CSAC) conducted a marketing campaign throughout the month. The objective of this campaign was designed to maximize seafood awareness throughout Canada.

The P.E.I. Department of Fisheries and Aquaculture held several programs in conjunction with the national campaign. These programs include; a Seafood Celebrity Cook-off, a seafood promotion within Island schools, a radio advertising campaign and a seafood information booth.

(i) Committees

Staff held membership on the P.E.I. Joint Promotion Committee, the Interdepartmental Nutrition Committee and the Heartsmart Committee.

STATISTICS AND MARKET INFORMATION

The Statistics section of this Division has, as a primary purpose, the function of acquiring and making available to the Department, and to the industry, detailed and timely statistical information on all segments of the fishery in this Province. During 1989, information was updated in such areas as fish landings and values, seafood production, fish processors and their products, employment levels in fishing, seafood exports, and other related topics. As well, publications containing this type of information were prepared and released.

(a) Fish Price and Market Report

The compilation of this weekly report involved the collection of information on fish prices and market conditions and it was provided to the fishing industry through the Department's radio program and regional newspapers. This data was collected at the end of each week to provide a view of the previous week's prices. A representative number of processing plants on P.E.I. and a number of fishery representatives from other Atlantic Provinces were contacted for fish prices. Maritime fish prices were confirmed through a weekly telex supplied by the Department of Fisheries and Oceans in Halifax. Information on prices and market trends for the Eastern United States was received from the National Marine Service in Boston, Mass.

(b) Statistical Review

The Fisheries Statistical Review was compiled to present a historical overview of P.E.I.'s fishing industry. This document contains fish landings and values by species and by district,

average prices received by P.E.I. fishermen, seafood products of each of the Atlantic Provinces, catches and values of fish from the other Maritime Provinces, exports by country of destination, numerous graphs, and other related fishery data. The Review has been updated and is available for public distribution.

(c) Tuna

This Division annually monitors and analyzes fishermen's catch records to provide information on which to base future management decisions.

The P.E.I. bluefin fishery grew from a total of five fish landed in 1967 to a peak of 1,048 fish landed in 1974. The allowable quota for P.E.I. from 1985 to 1987, was 660 fish. In 1988, the allowable quota for P.E.I. was reduced to 476 fish or 190 metric tonnes. In 1989, a new tuna allocation system was introduced based on quarterly allocations during the season. The quota for the Atlantic region was 573 tonnes. P.E.I. caught 358 tuna or 97.8 metric tonnes in 1989 with 295 of the total caught in Nova Scotia waters.

The "tended line" fishing method was introduced to this fishery in 1981 and today the majority of bluefin tuna are landed by this method. Rod and reel fishing continued from some ports by those fishermen who charter their fishing boats. In 1989, all tuna landed by P.E.I. fishermen were caught by the tended line method.

The following is a summary of the number of tuna landed by port for the past five years.

Port	1985	1986	1987	1988	1989
Sea Cow Pond	7	12	--	5	8
Tignish	95	34	33	98	38
North Rustico	5	--	--	--	--
French River	1	--	--	--	--
Tracadie	4	--	--	--	--
Savage Harbour	7	1	--	--	--
Morell	15	--	2	--	--
Naufrage	34	4	4	--	--
North Lake	39	17	7	--	1
Annandale	2	--	1	--	1
Graham's Pond	1	--	--	--	1
Beach Point	4	1	--	--	10
Murray Harbour	7	5	--	--	1
Souris	--	--	--	--	3
TOTAL	222	74	47*	103**	63***

* Additional landings of 8 by P.E.I. fishermen in N.S. ports for a total of 55.

** Additional landings of 70 by P.E.I. fishermen in N.S. ports for a total of 173.

*** Additional landings of 295 by P.E.I. fishermen in N.S. ports for a total of 358.

The bluefin tuna received a wide range of prices in 1989. P.E.I. fishermen received tuna prices ranging from $2.50 - $15.25 per pound. In 1988, P.E.I. fishermen received tuna prices ranging from $3.00-$12.00 per pound.

The week showing the largest catch of bluefin tuna in 1989 on P.E.I. was September 17th - 23rd, when 19 tuna were landed. In 1988, the week of the largest catch was September 4th - 10th when 45 tuna were landed.

(d) Snow Crab

This Division also monitors snow crab landings throughout the fishing season to provide information upon which to base management decisions.

P.E.I. was granted 16 exploratory permits in December of 1984 and a further 14 snow crab exploratory permits were granted in April 1986. The first 16 exploratory permits were converted to permanent licenses in 1987 and the other 14 remain as exploratory permits. P.E.I. snow crab fishermen operate in two zones, 25 & 26 and fish primarily off the North Shore of P.E.I.

Area 26, is the larger of the zones. In 1985, only P.E.I. fishermen were permitted to fish in these zones. However, in 1986, permission to fish in these zones were granted to a number of offshore vessels from Quebec and New Brunswick by the Department of Fisheries and Oceans and they retained this privilege in 1987 and 1988. In 1989 these vessels were removed from the P.E.I. zones.

The snow crab fishery is monitored by the Federal Department of Fisheries and Oceans with regard to quality and fishing seasons. This year, on P.E.I. the snow crab fishery was open from April 12th to May 29th with no fall season. Landings by P.E.I. fishermen were 1.7 million lbs., an increase of 13.3% compared to 1988. Fishermen received $1.00-$1.25 per pound for their snow crab in 1989.

NOTE: Please refer to Appendices 1 - 9 for further statistical data and tables depicting landings, values, production and exports of P.E.I. fishery products.

(e) Seafood Products Directory

The Seafood Products Directory was updated during the year. This publication provides information on the seafood products produced by P.E.I.'s Provincially licensed and Federally registered export plants and Provincially licensed non-export plants. It also includes: major shellfish shippers and their seafood products, a listing of trout processors, trout hatcheries, seafood agents/brokers, and seaplant companies. The directory also contains the harvesting seasons for all P.E.I. seafood species and a glossary indicating the scientific name of each species.

This publication is a buyer's guide for seafood produced in the Province and it is distributed upon request.

(f) The Fishing and Aquaculture Industry of P.E.I.

The Fishing and Aquaculture Industry of P.E.I. is a four page booklet which was completed in 1989 and provides general information on all aspects of the fishing and aquaculture industry of P.E.I. This publication contains detail on all P.E.I.'s major species, harbours, ports, vessels, processors and fishermen. This booklet is available upon request.

(g) General

The Fishery Statistics pamphlet was reprinted to reflect annual up-to-date information. This pamphlet is used as a quick guide to research fishery statistical data, and is used in all information packages sent from the Department.

The Bluefin Tuna pamphlet was also reprinted to reflect current statistics. This pamphlet is distributed to tuna charter establishments, interested processors, school children and in general is used as a reference for numerous requests on this fishery.

RESOURCE MONITORING

The Resource Monitoring Program monitors fish landings at P.E.I. ports on an ongoing basis. Basic industrial characteristics of the catch, primarily individual lengths, are recorded in a structured manner and the information is used to (1) identify and monitor, quantitatively, long term trends in landed sizes; (2) assist in the formulation of Provincial positions on some key management issues; and (3) provide descriptive statistics with which to facilitate the development and/or expansion of the P.E.I. fishery.

Although, the Resource Monitoring Program has been in existence since 1979, the range of species and gears covered by the program has grown. In 1989, dogfish was added to the species

list and several new gear types were covered for previously included species. A total of 69,086 fish were measured during the last year.

Table 1 summarizes data available from the Resource Monitoring Program, for a selection of gear types, covering the period from 1979 to 1989.

Resource Data collected by the Resource Monitoring Program is utilized by Department staff for more directed studies of the resource as issues arise and is shared with the Federal Department of Fisheries and Oceans for further analysis.

TABLE 1. AVERAGE LANDED LENGTH (cm, total) FOR FINFISH SPECIES, BY GEAR TYPE, PRINCE EDWARD ISLAND, 1979 - 1989.

SPECIES	GEAR TYPE	YEAR										
		1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
AT. COD	TRAWLER, >65'	51.2	53.8	58.8	56.6	57.2		58.6	59.9		43.6	
	TRAWLER, <65'				51.3	54.7	51.6	51.0	49.2	48.2	49.3	47.7
	DAN/SCOT SEINE				52.2	57.6	48.7	50.9	47.5	48.1	49.6	47.2
	PAIR TRAWL				53.3	56.3	50.9	51.8	51.5	48.6	49.0	47.5
	GILLNET				60.1	60.4	61.4	54.9	58.2	54.4	53.3	54.5
	LONGLINE				59.4	55.3	54.0	54.3	61.4	53.0	52.8	53.6
	HANDLINE				62.4	63.4	54.9	52.0	50.0	49.2	60.4	
WHITE HAKE	TRAWLER, <65'				61.7	63.2	62.5	59.0	58.7	54.3	57.6	54.8
	DAN/SCOT SEINE				64.7	67.4	55.4	60.6	61.5	57.4	57.2	65.1
	PAIR TRAWL				66.2	62.9	62.5	61.1	63.6	56.9	57.7	60.2
	GILLNET				69.8	69.7	71.1	67.5	71.4	67.5	71.4	66.3
	LONGLINE				67.4	71.8	68.5	73.5	71.8	68.0	69.4	65.7
	HANDLINE				67.1	68.6	60.3	66.2	68.4	62.0	67.7	
REDFISH	TRAWLER, >65'			30.9	30.9	31.7	31.9	29.2	31.4	31.9	30.4	29.0
	TRAWLER, <65'											28.8
AMERICAN PLAICE	TRAWLER, <65'					37.1	36.3	35.6	37.3	34.6	34.3	34.2
	DAN/SCOT SEINE					34.7	37.9	28.1	37.1	33.9	34.0	32.6
	PAIR TRAWL					34.7	35.4	34.0	37.1	36.2	37.3	34.9
	GILLNET											29.2
	LONGLINE											33.9
WINTER FLOUNDER	TRAWLER, <65'					30.8	29.5	29.6	28.0	28.3	30.4	27.9
	DAN/SCOT SEINE											27.3
	PAIR TRAWL					30.3	30.5	29.7	29.0	29.0	30.7	29.3
	GILLNET											31.3
YELLOWTAIL	DAN/SCOT SEINE											29.2
	GILLNET											29.2
WITCH	PAIR TRAWL											42.7
DOGFISH	TRAWLER, <65'											76.7
HERRING	ALL GEARS				29.1	30.1	30.9	30.7	29.3	28.6	29.1	30.3
MACKEREL	ALL GEARS				33.6	33.9	33.0	32.6	34.0	35.2	35.3	39.2

SPECIAL PROJECTS AND STUDIES

(a) The impact of proposed changes to the Unemployment Insurance Act by the Federal Government was assessed. The announced changes affect those employed in the processing sector by increasing the number of employed weeks required to qualify for unemployment insurance benefits, and reduce the duration claimants can draw benefits. An estimated fifteen percent of fish plant workers will not qualify for unemployment insurance benefits under these proposed changes to the Unemployment Insurance Act. Individuals employed in the harvesting of fish are not affected by the unemployment insurance changes.

(b) Production Study - A survey of salmonid growers identified the quantity of fish raised in 1988, and estimated production in 1989, and 1990. The survey was done at the request of trout growers to determine Island supply. Data was collected for various species and seasonal supply trends developed.

(c) P.E.I. Cultured Fish Co-op - Staff attended a series of meetings with trout growers which culminated in the formation of the P.E.I. Cultured Fish Co-op. Assistance where necessary was provided and discussions with other government departments identified programs which were of use to the P.E.I. Cultured Fish Co-op.

Cost of production surveys were also conducted on behalf of the trout growers. The purpose of these surveys were to identify the variable and fixed costs of grow-out operations. By estimating these production costs it was hoped growers could reduce costs, and provide the Department with information on which to design future programming. The results will be completed in 1990.

(d) Training - A Human Resources Planning Committee, chaired by staff prepared the terms of reference to assess training needs in the fishery for the next three to five years. The consultant, Don Morrissey of Holland College, is to identify the future direction of the fishery, and the skills required by those employed in the commercial fishery. The study is to be completed during 1990.

(e) Lobster Study - A consultant, Ed Mason, was contracted by Government to determine the success of holding live lobster into the off-season using three holding systems. The economic evaluation of each system will be conducted by Division staff in 1990.

(f) Project Referrals - In conjunction with other Divisions of the Department, staff evaluated requests for expansion, modernization or new construction of processing facilities for use by Departments and Agencies involved in financially supporting the fishing industry.

PROCESSING AND QUALITY DIVISION

Lloyd Murphy - Manager
Lynn A. Wall Processing Technician

The role of the Processing and Quality Division is to ensure the maintenance of a consistent level of high quality in fish products, to both safeguard the health of the consumer and to enhance the marketability of P.E.I. fish products.

Two full time and two seasonal personnel act as the resource center for implementing programs directed towards the Processing sector. The Division implements the P.E.I. Fish Inspection Act and Regulations, the Processors Technology Development Program, the Processors Quality Improvement Program and other related quality and development initiatives.

Activities undertaken during the twelve months ending December 31, 1989, are as follows:

Fish Inspection Act

The P.E.I. Department of Fisheries and Aquaculture is responsible for inspection on intra-provincial trade in fish and fish products while the Department of Fisheries and Oceans is responsible for inspection of products exported from the Province. The Prince Edward Island Fish Inspection Act and Regulations gives the Province authority to ensure seafood is purchased, processed and marketed under sanitary conditions.

Buying Licenses were issued to each buyer, upon compliance to the Fish Inspection regulations of their facilities, equipment and transport vehicles used for carrying raw product.

Processing licenses were issued to all establishments engaged in the business of processing fish products for resale to the consumer. These establishments had to comply in all aspects to the requirements under the Fish Inspection Act and Regulations. Over a six month period in the summer over 700 inspections were carried out.

Each registered non-export facility is routinely inspected to determine if plant construction and sanitation regulations are in compliance. Throughout the summer Provincial officials monitored fish buying practices at all buying stations on the island and worked closely with Provincial health and D.F.O. officials on the inspection of processing facilities where fish products were prepared for sale to the public.

Licensing

The Licensing system for 1989 has improved quality compliance. Detailed recordings of all inspections and provisions for eligible buyers to receive licenses has been compiled. Licenses were issued according to species purchased and buying station locations. Inspection controls were maintained to assure that buyers achieved the quality standards for each species group. Licensing data was computerized and revised on a regular basis.

The Fish Buyers Licenses are broken down into four categories.

(1) Crustaceans
(2) Groundfish
(3) Pelagic
(4) Molluscs

Buyers purchase only those licenses applicable to their operations.

Separate Fish Peddler Permits were made available to those individuals who participated in peddling fishery products throughout the Province.

TOTAL NUMBER OF BUYING LICENSES ISSUED IN 1989: 553

CRUSTACEAN LICENSES - 208
GROUNDFISH LICENSES - 122
PELAGIC LICENSES - 122
MOLLUSCS LICENSES - 101

TOTAL NUMBER OF PROCESSORS LICENSES ISSUED IN 1989: 74

TOTAL NUMBER OF PEDDLERS PERMITS ISSUED IN 1989: 15

Herring Quality Development Program

The P.E.I. Department of Fisheries and Aquaculture through the Processor Quality Development Program provided financial assistance to federally - registered export plants on P.E.I. for the purchase of insulated fish boxes. These insulated fish boxes were loaned to fishermen for storage of herring onboard their vessels.

The Department provided an incentive grant on a 50/50 basis to a maximum of $10,000 per registered plant.

The following processing plants participated in the program:

- Keeping and MacKay Ltd. - Beach Point
- Wendell Grahams 1981 Ltd. - Gaspereaux
- North Ocean Enterprises Ltd. - Souris
- Souris Seafoods Ltd. - Souris
- International Seafoods - Morell
- Babineau Fisheries - Morell
- Alberton Fisheries - Alberton

The program included a monitoring component and its objective was to determine if quality differences existed between the varying methods for herring storage on board vessels. The quality of herring stored onboard in slush ice in insulated tanks was assessed and compared to bulk herring stored in non insulated tanks and herring storage in tote boxes.

The monitoring component of the project was conducted by Mr. Don Morrissey, Fisheries Extension, Holland College.

Criteria used to assess herring quality were:

- tears in head
- tears in body
- tears in tail
- bruising
- crushing
- broken spines
- bloody gills
- bloody eyes
- temperature
- bloody roe
- broken roe sacs
- mature/immature/spent
- yield

Observations made during this project indicated that storage in insulated tanks with ice and water provided the best quality fish and roe. Although improvements to the slushing practice could be made, this method was given the best rating in providing a top quality fish.

Since the herring fishery is a roe fishery, the important finding is in comparison of roe yield in relation to storage methods. The slush-ice tank storage provided the highest roe yield.

Slush Tank Storage - 6.0% roe yield
Dry Bulk Storage - 5.2% roe yield
Tote Box Storage - 5.1% roe yield

Some recommended practices identified to improve roe quality were:

- A shorter time frame should be allowed to elapse between setting of the gillnets and retrieval of fish. This would result in fewer fish being captured, allowing less pressure on fish during retrieval.

- Proper storage of fish once captured is vital. The recommended practice would be storage in slush ice in insulated tanks.

- Greater care must be taken when stripping herring from the net. Damage results when herring are pulled and shaken from gill nets.

Processors Quality Improvement Program

The Processors Quality Program provides financial assistance to registered fish plants located on P.E.I. to upgrade their facilities to comply with fish Inspection Regulations and make it easier for plant personnel to follow the schedule of Good Manufacturing Practices. The assistance provided is 50% of capital expenditures to a maximum of $10,000 per plant.

Eligible items can include structural changes such as; accommodation of locker rooms for staff, adequate lunch rooms, new washrooms, ceiling walls, drains, floors, cookroom or equipment required to improve quality processing.

Fish Silage

The Department of Fisheries and Aquaculture in conjunction with the P.E.I. Hog Commodity Marketing Board continued a fish silage pilot project that began in 1988. The objective of the project is to determine the viability of utilizing fish wastes for an animal feed. During 1989 a mini silage plant was set up in a building on Souris wharf. The operation was more mechanized than the previous work done at Beach Point in 1988. Three twenty five ton capacity steel holding tanks were erected adjacent to the plant. Immediately after the groundfish waste was acidified, it was pumped into these storage tanks for digestion break down. Pumps were used to move the silage from tank to tank, to enhance complete breakdown and uniform mixture. After the fish silage process was complete, the finished product was pumped into a container truck for transport to the farms for feeding trials. Approximately 200 tons of liquid fish silage was produced and delivered to hog and beef farmers.

At the hog farms, fish silage and whey are combined to provide approximately 35% of the diet and this diet is compared, in hog feeding trials, to diets not containing fish silage. Pre-

vious work conducted by the Hog Board showed fish silage can be fed at 10% of the diet and provide about 40% of the supplemental protein.

At the beef farms, fish silage is being assessed as a protein supplement for beef cattle. Fish silage was delivered to the Agriculture Canada Research Station in Fredericton, New Brunswick, where an extensive feeding trial is on-going with dairy heifers. In addition to average gain, rumen digestion and metabolism of animals receiving fish silage will be studied. To date cattle on fish silage diets have shown performance equal to cattle on diets with soybean meal as the supplemental protein.

During the year the technology of fish silage production was further explored. Normally fish silage is produced by adding acid to ground fish. When the acid is added, natural enzymes in the fish become active and liquify the fish in 1 to 2 days at room temperature. The acid represents a major cost in the production of fish silage. In an attempt to lower cost of production, two projects were carried out - (1) different acids and combination of acids were used to produce batches of fish silage. The quality of protein and fats in these silages, in storage, is being evaluated by a range of chemical tests (2) fish silage was produced by a natural fermentation technique. This involved adding lactobacillus bacteria and a carbohydrate source to ground fish. The lactobacillus bacteria produce acid for the carbohydrates and after a period of time (4 to 5 days) the acidity is increased to the point that the material is preserved. Four batches of silage produced by this technology were sent to Nova Scotia Agricultural College for feeding trials with rats.

In conclusion, it appears fish silage is a viable means for local fish plants to consider for disposal of their fish offal.

The work of the past two years has allowed familiarization and experience with the production of fish silage and has allowed for an evaluation of fish silage as a feed ingredient for the livestock industry. The stage is now set for our two primary industries, fishing and agriculture, to benefit from this technology.

In Plant Training

The development and implementation of training courses to be used in fish processing plants was continued in 1989.

Courses available to the fishing industry by the Department in conjunction with Holland College personnel included; a Listeria Awareness Seminar held Island wide at 16 different locations which focused on lobster processing.

A video presentation entitled "Good Manufacturing Practices for Lobster Processing Operations" was produced to act as an instructional aid when presenting seminars to industry.

A 2 day seminar was scheduled for the employees of Island Saltfish Inc., to instruct personnel in the quality assessment of fresh fish for salting purposes. Theoretical and practical applications were included in the workshop.

The "Code of Practice for Trout Processors" manual was revised to provide a better overview of the technological changes in the industry. Processing guidelines were updated and grading standards were devised for those growers wishing to grade their products before resale.

Shelf-life studies are to be conducted in the new year to aid growers in determining product shelf-life before distribution to the consumer. The results should include a standard "Best Before" date for processed farmed trout and other related data.

An "Operational Seafood Guide" is under development for release in 1990. This manual will serve as a guideline for all seafood retail operators. All areas of the retail operation will be covered and should prove a valuable reference and instructional guide for the industry.

On-going in plant training was provided to processors and buyers who requested this type of training. Frequent visits to processing establishments resulted in suggestions being made to quality control personnel in regard to good manufacturing practices and regulatory requirements.

FINANCIAL SERVICES AND SPECIAL PROJECTS BRANCH

Donald Judson, Director

The Financial Services and Special Projects Branch provides financial services to various firms and individuals involved in the commercial fishery. Special projects that impact on the P.E.I. fishery are prepared and implemented as needed. Current staff includes the Director and one temporary employee. Casual employees are utilized as required.

Fish processors, moss harvesters, fishermen and service industries; e.g. boat builders, are assisted in a number of aspects related to financial matters that will lead to the development of their respective enterprises. These aspects include applications for development grants.

Programs currently implemented include the Fishermen's Groundfish Program, Fleet Development Program, Redfish Harvesting Equipment Program and the Fishermans Capital Investment Fund. The latter program came to a close on March 31, 1989. The Commercial Fishermen's Investment Incentive Program concluded April 1, 1987, but continued to accept certain applications until February 26, 1988. Annual claims will be processed until 1992. Support is provided to the fish processing sector in preparing financial projections for new developments and financial monitoring was carried out on a number of assistance projects.

The Branch operates as a liaison with the boat building industry on P.E.I. and in the Maritimes and also with the seaplant harvesting and processing industry.

Special projects during 1989 included the Seaweed Exploratory Raking Project in Kings County and the Nearshore Decked Fleet Profile Study. As well, the Branch is coordinating computerization of Department Programs and information database.

The Director also represents the Department on a number of intra-provincial and Federal/Provincial committees. The Director provides support service to several committees resulting from the signing this year of a five year Canada/P.E.I. Co-operation Agreement on Fisheries Development. These include the coordinating committee, and subcommittees on management information, program review, public information and environmental issues.

Activities undertaken during the twelve months ending December 31, 1989 follow:

Nearshore Fleet Development Program

The Department continues to assess alternate methods of economically and safely landing our traditional share of fisheries resources on P.E.I. One such alternative is the construction of new hatched decked vessels by fishermen who have the required licenses for nearshore vessels. A number of hatched decked vessels, owned by P.E.I. fishermen, are operating in the Gulf Region engaged in the groundfish and crab fisheries.

A policy respecting the level of financial assistance provides Island fishermen with a grant of 25% of the capital cost to a maximum grant of $20,000 for new near shore vessels over 25 gross registered tons.

Since the inception of the program in 1983, twenty-eight fishermen have received assistance in the construction of new hatched decked vessels. These twenty-eight vessel owners received a total of $878,374 towards the total capital cost of $5.23 million. Two fishermen received assistance in 1983/84; four in 1984/85; five in 1985/86; six in 1986/87; eight in 1987/88, and three in 1988/89. All but one of the vessels constructed to date are less than 45' length overall with the remaining one 55' length overall. Four are of wood construction, three of aluminum and twenty-one of fiberglas. Uncertainty in the crab fishery and new vessel replacement rules announced April 1, 1989, by Fisheries and Oceans, Canada, for groundfish vessels is having a negative impact on the Fleet Development Program. Groundfish fishermen are only permitted to construct new vessels that do not exceed the specific dimensions of their existing vessels. During the period of April 1, 1989 to December 31, 1989, one application was approved for financial assistance.

Decked Vessel Study

A nearshore (middle distance) fleet of approximately thirty-two boats has evolved during the period 1983 to 1989. These boats operate principally in the groundfish and crab fisheries. Many of the boat owners received assistance under the Nearshore Fleet Development Program. The need to have appropriate data and information useful in determining future development policy led the Department to undertake a profile study of closed deck fleet of vessels in the 41 - 48 foot length overall range.

All boat owners were contacted and the majority have participated in the study by providing valuable information as required. A report, based on study information, is currently being prepared.

Fishermen's Groundfish Program

Concern over the decline in groundfish landings on P.E.I. led the Department to undertake a comprehensive study of the inshore groundfish fleet in 1988. Based on information contained in the study, it was determined that there was a need to assist inshore vessel owners to keep pace with technological changes in groundfish harvesting methods. The Fishermen's Groundfish Program, initiated April 6, 1988, provides conditional grant assistance to inshore vessel owners to purchase a number of capital items related to groundfish harvesting. This program complements the Fleet Development Program administered by the Department to construct new near-shore decked vessels. Redfish equipment was included as an eligible item April 12, 1989. Financial assistance, by way of conditional grants on eligible items, is provided to groundfish fishermen at a level of 35% of the capital cost to a maximum grant of $7,500 per fisherman.

During the period from April 6, 1988 to December 31, 1988, the Department approved 204 applications for assistance on 338 eligible items for a total of $327,622. For the twelve month period ended December 31, 1989, 101 applications were approved for assistance on 162 items for a total of $195,771. Following approval, some fishermen did not proceed and withdrew their applications, while others downscaled their projects by eliminating certain items or purchasing less expensive items.

Following is a summary of approved conditional grants by eligible item, total capital cost and total conditional grants approved from initiation of the program to December 31, 1989:

FISHERMEN'S GROUNDFISH PROGRAM
Summary - Approved Conditional Grants -
311 Applications
April 6, 1988 - Dec. 31, 1989

Eligible Items	No. of Items	Total Capital Cost ($)	Total Conditional Grants Approved $
Permanent Deck	1	2,000	700
Fishhold	-	-	-
Colour Sounder	158	326,997	114,449
Plotter	94	314,775	110,171
Longline Gear	63	121,115	42,390
Baiter	11	23,905	8,367
Bait Cutter	6	11,900	4,165
Longline Hauler	31	62,690	21,942
Other Longline Gear	8	8,695	3,043
Jigging Reels	2	12,600	4,410

Mobile Gear	23	96,263	33,692
Winch	37	208,014	72,805
Engine	19	364,200	28,500
Redfish Equipment	47	285,600	78,759
TOTAL	**500**	**1,838,754**	**523,393**

Ninety-four fishermen who completed their projects on 127 items during the period from April 6, 1988 to December 31, 1988, received $109,477.25 in conditional grants. For the twelve month period ending December 31, 1989, 116 fishermen completed projects on 156 items and received $161,850.76 in conditional grants. Following is a summary of Conditional Grant payments made under the program to December 31, 1989.

FISHERMEN'S GROUNDFISH PROGRAM
Summary Conditional Grant Payments
210 Applications
April 6, 1988 - December 31, 1989

Items	No. of Items	Total Capital Cost - $	Total Conditional Grants Paid $
Permanent Deck	-	-	-
Fishhold	-	-	-
Colour Sounder	118	219,635.97	76,872.59
Plotter	59	183,456.00	64,209.60
Longline Gear	25	26,881.31	9,408.46
Baiter	3	4,975.00	1,741.25
Bait Cutter	1	2,400.00	840.00
Longline Hauler	6	8,856.00	3,099.60
Other Longline Gear	1	575.00	201.25
Jigging Reels	1	9,240.00	3,234.00
Mobile Gear	15	48,024.31	16,808.51
Winch	23	119,056.67	41,669.84
Engine	5	97,462.00	7,500.00
Redfish Equipment	26	145,393.38	45,742.91
TOTAL	**283**	**865,955.64**	**271,328.01**

The average conditional grant to fishermen for the program to date is $1,292.04 for an average of 1.35 items. The average conditional grant per item is $958.76.

A review of the Fishermens Groundfish Program was completed in February 1989 to determine the level of program acceptance and if it was meeting program objectives. Questionnaires were sent to 78 participating fishermen to obtain their views. Thirty-three of these were completed and returned. This high percentage of returns has provided valuable information to the Department to

assist in future program implementation. It was determined that the program should be retained in its present format. As the first full season has elapsed since the program was instituted, the Department is reviewing performance requirements of individual fishermen.

Fishermen's Investment Incentive Program

Fishermen had requested, particularly during periods of high interest rates, preferential rates of interest for monies that they must invest directly into their fishing enterprises. The Department initiated the Investment Incentive Program which provided assistance in the form of up to a four percentage point interest reduction grant paid directly to the fisherman upon receipt from a recognized lending institution of itemized interest charges related to approved projects. Eligible projects included new or used capital asset purchases, acquisition of fishing enterprises and fishing privileges, repairs to capital items and working capital loans. The interest rebate assistance is paid on an approved loan maximum of $30,000 for a maximum of five years. More than one loan can make up the total aggregate of $30,000.

The program was initiated on May 24, 1983 and having reached its objective of assisting during periods of high interest rates, came to a close April 1, 1987. Applications for loan amounts actually drawn down from lending agencies prior to April 1, 1987 were accepted up to February 28, 1988. Approved applications on file continue to be maintained for interest rebate claims for up to five years or until the loan is paid out whichever is the lesser.

Over the life of the program, 779 applications were received of which 667 had been approved. A total of 319 files remain active as at December 31, 1989. The following table provides statistical data on program operation by calendar year and program totals to-date:

Calendar Year	# App. Rec'd.	# App. Appv'd	Loan Base Amt. Approved ($)	Average Loan ($)
1983	60	46	397,415.77	8,639.47
1984	155	137	1,898,532.69	13,857.90
1985	193	183	2,913,093.96	15,918.55
1986	196	166	2,604,436.50	15,689.38
1987	144	117	2,025,493.66	17,311.91
1988	31	18	268,551.18	14,919.51
TOTAL	779	667	10,107,523.76	15,153.71

Fishermen's initial claims average one year following loan approval, as the Investment Incentive Program pays claims when the interest payments have been made to the lender. Additional

claims are made annually until the loan is retired or the five year maximum is reached. Claims will continue to be received and processed until 1992 on outstanding active files. Following are details of claims paid:

Calendar Year	# Claims Paid	Total Paid ($)	Average Claim Payment ($)
1984	98	26,268.33	268.04
1985	223	92,610.17	415.29
1986	368	166,573.20	452.64
1987	399	194,021.90	486.27
1988	426	201,106.85	472.08
1989	358	184,742.76	516.04
TOTAL	1,872	865,323.21	462.25

A review of the Commercial Fishermens Investment Incentive Program was completed in November, 1989. A number of fishermen participating in the program were contacted and asked to respond to a questionnaire designed to obtain their views on the Program.

Fishermen were generally satisfied with the delivery of the Program and a high percentage reported that the rebate method met the original program objectives.

Fishermans Capital Investment Fund

The Department recognized that fishermen require large sums of money for fleet acquisitions, purchase of new or used vessels and equipment and upgrading or modernizing capital equipment and that appropriate equity, or down payments are required at time of purchase. The Fishermans Capital Investment Fund was designed to encourage fishermen to invest in savings to allow for the future capital equipment requirements of their fishing enterprises. The program was initiated on April 1, 1987, and due to a low level of acceptance by fishermen, came to a close on March 31/89. The program augmented a fishermen's annual $1,000 investment by $150.00. This assistance, accompanied by combined interest on the fishermen's investment and the additional investment by the Department, was designed to assist the fisherman to accumulate a fund for purchase of necessary capital items. The Program provided for bonafide commercial fishermen to invest in the financial institution of their choice, with the Department investing its portion in Provincial Deposit Receipts at the P.E.I. Department of Finance. Fishermen may cash their investments at any time and the portion used for eligible items will form the basis for the Department's contribution. The Branch continues to manage active individual fishermans Investment Funds.

Seaweed Exploratory Raking Project

Acadian Seaplants Ltd., who operate seaplant buying and drying facilities at Naufrage, proposed a drag raking experiment be carried out off North Lake and Naufrage to determine the level of marine plants resources available and what impact drag raking would have on both the seaplant and lobster resources in the area.

In 1988, an exploratory drag raking project was prepared and funded in cooperation with Fisheries and Oceans, Acadian Seaplants Ltd. and the P.E.I. Department of Fisheries and Aquaculture. Two preset areas were designated; west of Campbells Cove Park and in the Goose River/Cable Head East area.

The first phase of the 1988 project was carried out at sea between September 10, 1988 and October 1, 1988. Three boats were selected by draw for each of the two specified areas. Due to lateness in the season, the second, or commercial harvesting phase, was not completed. The first phase consisted of raking for specified times on a preset grid pattern to determine the extent of seaplant beds and density of biomass and to assess any lobster damage.

In 1989, North Lake fishermen did not wish to further participate while the Naufrage fishermen requested that up to six vessels be given permission to assess the mixed seaplant resource by commercial raking.

Six Naufrage area fishermen selected by draw, participated in the seaweed raking project during the period August 8, 1989, and September 15, 1989. A total of 254,000 lbs. of mixed plants were landed consisting of approximately 70% Furcellaria lumbricalus, 16% Chondrus crispus and 14% foreign non-commercial sea plants. Project monitoring was carried out by Fisheries and Oceans biologists in 1989, as in 1988. Their findings are being assessed with regard to available seaplant biomass and to any effects on the lobster resource.

AQUACULTURE BRANCH

Irwin Judson, Director
Brian Gillis - Shellfish Technician
Paul Burleigh - Shellfish Technician
Matt Smith - Shellfish Technician

The Aquaculture Branch is responsible for carrying out programs and services for Prince Edward Island aquaculturists, including mussel and trout growers and the oyster fishery, as well as growers of other species such as quahaugs, bay scallops, arctic char and salmon. The Branch also provides ongoing liaison with the Department of Fisheries and Oceans and other agencies in respect to activities in aquaculture development, management and research.

1989 was the second full year of operation of the Agreement for Commercial Aquaculture Development signed between the Department of Fisheries and Aquaculture and the Federal Department of Fisheries and Oceans. This agreement has served as the framework for federal/provincial cooperative management of aquaculture.

The Department of Fisheries and Aquaculture continued its ongoing programs in support of mussel and salmonid culture, as well as the five year $2.5 million Aquaculture Development Program begun in 1987. This program is a cooperative undertaking between the Department of Fisheries and Aquaculture and the aquaculture industry. Program planning and implementation is carried out in close consultation with the Department of Fisheries and Oceans and the associations representing the various components of the aquaculture industry. Funding is provided for projects in oyster enhancement, trout and mussel production, quahaug and bay scallop culture development and soft shell clam depuration.

In October a new federal/provincial agreement, the Cooperation Agreement on Fisheries Development, was negotiated with the Atlantic Canada Opportunities Agency and the Department of Fisheries and Oceans. The agreement contains a number of initiatives directed at development in the aquaculture industry. These initiatives include projects in oyster enhancement, aquaculture diagnostic services, mussel culture, salmonid culture, clam culture, scallop culture, shellfish seed supply, shellfish depuration and other potential aquaculture species.

The oyster industry continues to expand annually. An almost unbroken trend of annual increase in landings goes back 16 years, to 1973. It is generally believed that the oyster enhancement programs of government and the shellfish associations are contributing to these successful landings. Cascumpec Bay is becoming a significant producer of oysters, with Bedeque Bay falling back as a result of lower spatfall results in recent years. Some

market resistance was felt in 1989 although this is believed to relate only to the lower standard and commercial grades. A return to more rigorous attention to grade standards and quality would benefit the industry in future years.

Arctic char is gaining substantial interest as a potential species for aquaculture. Two hatcheries have stocks under experimental permission, contingent upon research studies into the interaction of char and local species. Preliminary hatchery results indicate that char may perform well under culture in Prince Edward Island and the growers are optimistic that the species will be attractive for diversification in the salmonid culture industry.

The trout and salmon growers formed a marketing cooperative during the year. The Island Cultured Fish Coop was instrumental in attracting good markets and prices for the 1989 crop season. The Coop was successful in leveling out the usual fall harvest glut, improving the co-ordination of marketing and cooperation among growers. Modest funding assistance for start-up was provided by the Department of Fisheries and Aquaculture.

Further work was undertaken toward the formulation of a long-range strategy for the development of salmonid culture. The Department is working with the industry through the Trout Growers Association and the Department of Fisheries and Oceans using, as a basic working document, a priorized list of management issues and development initiatives from a study done in 1988 by UMA Engineering Ltd. The current worldwide shakeout in the salmon industry, accompanied by drastic price decreases, lends particular importance to the identification of a proper niche for the production of salmonid species in Prince Edward Island.

The culture of bay scallops increased significantly in 1989. Approximately twenty tonnes of bay scallops were produced. About ten growers started some three million seed scallops obtained from the Holland College Aquaculture Program and a private hatchery in Nova Scotia. The Department commissioned one grower to undertake a number of growth trials using different materials and techniques and to produce a report to be used as a guide for new growers. Considerable work remains to be done in the areas of production cost, storage after harvest, and promotion.

Taking advantage of the Department of Industry's Jobs for Youth Program, the Department was instrumental in supplying five students to trout growers and eight students to mussel growers for ten weeks each for the purpose of gaining job experience.

A more detailed report on the activities of the Aquaculture Branch for the year ended December 31, 1989, follows:

MUSSEL MONITORING PROGRAM

The mussel monitoring program continued in 1989 providing 108 mussel growers in seventeen major mussel-producing areas with information on water temperature and salinity, mussel meat condition index and concentration and size of mussel larvae. As a result of the mussel toxin crisis of 1987-88, other items were monitored on a trial basis. The diatom Nitzschia pungens has been closely linked with the toxin problem and the estimated numbers were noted when the diatom was observed. The following table shows the areas where Nitzschia pungens bloomed in 1989 and the date on which some of those areas were closed to shellfish harvesting.

Area	Date of First Observation	Date Closed
Boughton River	August 7	-
Cardigan River	August 7	November 9
Brudenell River	August 11	November 9
St. Mary's Bay	September 11	November 20
Murray River	September 12	-
New London Bay	October 4	-
Tracadie Bay	October 11	-
Winter Bay	October 11	-
St. Peter's Bay	October 13	-
Darnley Basin	October 18	-
East River	October 19(trace)	-

A bright pink hydroid has been causing concern to some mussel growers and especially seed suppliers who have had their seed collectors heavily infested. The hydroid is a colonial animal belonging to the same biological group as corals and jelly fish. Many of this group exhibit "alternation of generation" in which a free swimming generation which looks and acts like a jelly fish alternates with a generation that looks and acts like an attached colony. The reproduction bodies are suspended from long branched stalks, which are brightly coloured. The female produces a peculiar free-swimming hydroid-like body and is spreading throughout our Island waters.

The hydroid affecting the Prince Edward Island mussels grows in clusters from two to five centimeters high with 16 to 20 tentacles. It is common from Cape Cod northward and in California and Europe. It was observed in the March Water area of Malpeque Bay this year as well as St. Peter's Bay, Tracadie Bay and Murray River. It was plentiful in East River, Southwest River and Winter Bay.

When the hydroid attaches itself to the mussel socks or seed collectors it competes with the mussels thus creating less marketable product per sock. This hydroid also hinders the processing of the mussels as the hydroid clogs declumping machines resulting in higher production costs.

In spite of the challenges in dealing with new problems, the mussel industry has continued its rapid rate of growth. Landings in 1989 were up significantly over 1988 and markets appear strong. The backlog of crop inventory being held on leases as a result of the domoic acid crisis of the 1987-88 crop year has been cleared, allowing a more orderly rotation of mussels from lease to market.

QUAHAUG CULTURE

Hatchery Operation (Spring)

Again in 1989, arrangements were made to produce quahaug seed at the Ellerslie Fisheries Station in conjunction with the Holland College Aquaculture Technology course. A department technician was responsible for seed production; however, a number of students taking the aquaculture technology course assisted in and learned from the various facets of quahaug seed production.

From January to June was spent conditioning and spawning shellfish and rearing the resulting larvae, using cultured algae, to a size suitable for planting in the wild. Four groups of quahaugs were spawned between January 3 and February 14. Quahaug larvae were grown using traditional methods and when quahaug reached 500u they were grown in upwelling systems. The initial system utilized 8" P.V.C. pipe for upwellers and when quahaugs reached 1.5 mm they were moved into a system using 14" P.V.C. pipe. These systems performed well. Five hundred thousand quahaug seed were produced of which 350,000 went to participants in the quahaug culture incentive program, 50,000 for departmental use and 100,000 smaller quahaugs were spread in Bideford River. The growth of quahaug juveniles in the hatchery was less than expected and can be attributed to poor broodstock and some difficulty growing certain species of algae in mass cultures.

Although the production of quahaug seed was the main goal of the hatchery operation, some bay scallop seed were produced and some new techniques for setting oysters were tested.

Workshop

On February 14, 1989 a workshop was put on to provide participants in the Quahaug Culture Incentive Program with information on quahaug culture so they would have a better chance of

success in their culture operations. Attendance was good with eleven participants in the program and eleven people interested in quahaug culture being present.

Winter Test Plots (1988-89)

The winter test plots set out in September and October of 1988 were checked in May. These plots consisted of wooden frames which were buried in the sand (low intertidal) and covered with 1/4" plastic netting. The quahaugs put in these plots were small and unlikely to survive but it was important to test the system in our winter conditions. None of the frames put out on the northern shore remained in place and it appears they were all lifted by ice. Five out of eight frames on the south side of the Island remained in place. It is uncertain why three of the frames were missing although one was on an area of shifting sand. There were no live quahaugs found in the plots on the north side of the Island, while three out of six of the plot locations on the south side of the Island had some live quahaugs (7-10 mm). These test plot results indicate that this system is probably not going to work on the shores on the north side of P.E.I. but with care may be suitable on the southern shores.

Summer Cages

The distribution of quahaug seed to growers began on June 5 with nine growers having their seed by June 17 and all but one completed on July 5. It would have been desirable to have all quahaug seed in the field by the first week in June but delays were encountered due to problems with sand washing out of cages and some growers not being able to devote the time necessary to put cages out and make required adjustments. Each grower received between 20,000 - 30,000 quahaugs ranging from 1.5 - 11 mm (mean size 3.5 mm).

The quahaugs were put in cages similar to those used in Cape Cod. The cages were 5' x 10' x 6" frames of rebar lined with plastic coated wire (1 1/2" or 1" mesh) with an inner liner of plurima (1/4" extruded plastic mesh). Burlap or woven poly was used on the bottom of the cage to hold sand. The cages were set out intertidally on cement blocks as this is supposed to improve growth rate. The cages worked well in some areas and not so well in others.

In some cases wave action lifted the woven poly and sand, leaving an opening where the poly was lapped allowing quahaugs to escape through the 1/4" plurima. Moving the cages to the bottom solved this problem. In some areas wave action washed sand and quahaugs out of the cages and 1/4" - 1/2" imported stone was used as a substitute substrate. Burlap was found unsuitable because

it rotted out in late summer allowing quahaugs 7-8 mm to fall through the 1/4" plurima to the bottom. Genetically improved seed (faster growing) might make burlap suitable.

The recovery of quahaugs from cages ranged from 0-83% with the average recovery being 38%. The low recovery can be attributed to the reasons mentioned above as well as heavy predation in some cages.

Mortality at the various sites ranged from 0-95% with the average being 19%. At most locations the mortalities were low but at four sites where predators were observed in cages losses were high. The main predators were rock crabs, mud crabs and starfish.

The size of quahaugs recovered in the fall ranged from 3-23 mm. The mean size at the various sites ranged from 6.2 - 11.5 mm with 9 mm being the overall mean size. This translates into a mean growth over the summer at the various sites of 1.5 - 8.3 mm (overall mean growth 5.4 mm).

Winter Plots (1990)

Most of the quahaugs were removed from the cages between mid September and late October. The growers disposed of their quahaugs as follows: 7 wooden frames used in winter 88/89, 2 - sinking trays, 2 - on bottom, 1 - pearl nets and sinking trays. The quahaug survival in the different systems will be checked in the spring of 1990.

Hatchery Operation (Fall)

In the fall broodstock was brought into the hatchery and preparations were made for the spawning of quahaugs early in January. Broodstock selected from 1988 seed will be used as part of spawning stock this year.

This year four hundred of the fastest growing quahaug seed were selected for use as broodstock in future years.

Conclusion

This past year was the first full year of operation for participants in the Quahaug Culture Incentive Program and much was learned. Some growers obtained good results while the results of others were less favourable. It is hoped that by getting 5-8 mm seed to growers in late May or early June and by making adjustments to methodology, growers will experience better results in 1990. Some recommended changes include: replacement for burlap, use polyethylene to hold sand, sew woven poly together where it laps, put at least one cage on bottom at each site, place cages so they are exposed weekly or bimonthly so they can be checked

for predators, and improve methods for sealing netting at top of cages so they can be opened and closed more easily by the use of angle iron frame for example.

OYSTER ENHANCEMENT

The oyster enhancement program is a joint project of the Department of Fisheries and Aquaculture, the Department of Fisheries and Oceans and the Prince Edward Island Shellfish Association. This Association is a legally incorporated body representing the shellfish interests of all Island harvesters of shellfish in public grounds. In 1989 the Queens County Shellfish Association, a subordinate body, also achieved legally incorporated status.

The aim of the program is to increase the Island's production of oysters which, in turn, increases the financial returns to the harvesters, dealers and the provincial economy. Efforts begun in 1987 to collect oyster spat by use of collector material, to relay oysters from areas of heavy concentration to areas of lesser concentration, and to de-silt the bottom to improve the conditions for natural spat collection were continued and expanded during 1989.

To assist in implementing these plans, the Department of Health and Social Services developed a Job Creation Program to provide the employees needed to carry out the activities which the project involves. Approximately $150,000 was provided by the Department of Health and Social Services for the salaries of seventy social assistance recipients in the O'Leary, Summerside and Charlottetown areas. Work began in mid-May and continued into 1990 using Charlottetown and Ellerslie as the two activity centers. The project provided 690 weeks of employment for the social assistance workers in 1989.

The job creation employees were supervised by a staff of four managers funded through direct grants from the Prince Edward Island Department of Fisheries and the Department of Fisheries and Oceans. Travel expenses and material purchases needed to equip the project were also jointly funded by the two levels of government.

Work accomplished included the preparation and filling of approximately 73,000 mesh bags with oyster shell which acts as a collector for the free swimming larvae to "set-on" as "spat" to become the seed oysters of the future. These collector bags were suspended on longlines and fences in designated rivers and creeks about mid-July. The fencing material (small diameter, 15' poplar poles) was cut on Department of Energy and Forestry property in the Mount Stewart area. Eight thousand of these poles were trucked to sites in East River, Smelt Creek and Paugh's Creek to be erected as fencing to accommodate the collector bags.

Slightly more than 4,000 five peck boxes of spat were collected in 1989 to seed out new areas and enhance heavily fished grounds. These young oysters are anticipated to grow to market size (75 mm) within five years providing over one million dollars of added income to the oyster industry.

The relay of oysters was another component of the 1989 oyster enhancement program. Oysters were dragged or picked from poor growing areas and relayed to good growing areas. The following table summarizes the results of the spat collection and oyster relay activities.

RESULTS OF 1989 SPAT COLLECTION AND OYSTER RELAY ACTIVITIES

	Spat (tubs*)	Relayed Oyster (tubs)
Lot 10	550	
Hills River	100	-
Ellerslie	435	-
Grand River	414	-
Bedeque Bay	350	30
Wilmot River	397	110
Cascumpec Bay	100	-
Duffy's Creek	200	-
Appletree Wharf	-	40
Glenfinnan River	141	43
Clyde River	204	36
West River	462	27
Fullerton's Marsh	385	-
TOTAL	4,006	286

*A tub is the approximate equivalent of a five peck oyster box.

A component of the program conducted by the Federal Department of Fisheries and Oceans which is integral to the oyster development strategy is the mining of shell in Malpeque Bay. This is the source of the shell used in the spat collector shellbags. As well, a number of private leaseholders availed themselves of quantities of shell for their own spat collection purposes.

The oyster enhancement project requires a considerable number of oyster dories, outboards and related equipment, all demanding continual repair and maintenance. Such maintenance is done during the winter so the project will be ready to go again in 1990.

The oyster harvesters and dealers consider the progress achieved in 1989 to be satisfactory during year three of a five year program. Various aspects of the project may be expanded, refined or modified through joint consultation among all the interest groups represented in this oyster enhancement project.

Mussel Production Enhancement Incentive Program

The Mussel Production Enhancement Incentive Program is designed to assist mussel growers, who have shown satisfactory results in their pilot projects, to expand. The program provides a 25% grant to a maximum assistance of $1,000 for specialized gear and equipment. In 1989, three growers participated for a total grant assistance of $3,000.

A total of $29,598 in grant assistance has been provided to thirty-three growers since the program began in 1987.

Trout Production Enhancement Incentive Program

The Trout Production Enhancement Incentive Program is designed to assist trout growers who have demonstrated viability in pilot scale operations to expand. The program offers a 50% grant to a maximum assistance of $3,000 for buildings and equipment specifically for trout culture. In 1989, one grower participated for grant assistance of $3,000.

A total of $28,779 in grant assistance has been provided to ten trout growers since the program began in 1987.

Aquaculture Crop Insurance Program

This program, initiated in 1989, is open to Prince Edward Island growers of mussels, oysters, trout and salmon who possess the necessary permits, licenses and leases and purchase aquaculture crop insurance from a recognized insurance company.

The assistance is in the form of a grant partially covering the premium cost paid by the grower for aquaculture crop insurance. The grant is paid at the declining rate: 30% of premium cost (maximum grant $3,000) in year one of the policy; 20% (maximum grant $2,000) in year two of the policy and 10% (maximum $1,000) in year three of the policy.

One mussel grower participated in the program in 1989 and received assistance of $2,177.

Aquaculture Loan Program

The Aquaculture Loan Program is available to mussel and trout growers possessing the necessary leases and licenses as well as at least two years pilot-scale experience who wish to scale up to a commercial operation. Initiated in late 1983 to provide confidence in the aquaculture industry to the financial community, the program has supported loans through the Prince Edward Island Lending Authority in the amount of $559,232.

On site inspection by Department of Fisheries and Aquaculture and P.E.I. Lending Authority personnel is carried out to monitor the progress of mussel and trout growers participating in the program.

Clam Depuration

In an effort to demonstrate the commercial depuration of shellfish, particularly soft shell clams, the Department of Fisheries and Aquaculture entered into an agreement in 1988 with a private firm at Annandale. The objective of the agreement is to develop a shellfish depuration project through the evaluation of facilities, equipment and techniques. In 1989 a building on the Annandale Wharf was renovated and fitted out with fiberglass tanks, a sea water supply system and a water purification system using up-to-date ultraviolet light technology. During the fall the operation went through a rigorous testing process and achieved certification by the Department of Fisheries and Oceans as a depuration facility. It is the only such facility in the Gulf Region.

APPENDIX 1
DEPARTMENT OF FISHERIES
P.E.I. LOBSTER LANDINGS AND VALUES
(1920 - 1989)

V = Values in ($000's)
Q = Quantity in millions lbs.

	Q	V		Q	V
1920	8.3	703.9	1950	9.9	1,963.0
1921	6.4	255.3	1951	8.3	1,702.0
1922	8.8	651.4	1952	8.4	1,849.0
1923	9.7	878.8	1953	7.0	1,997.0
1924	6.5	564.8	1954	7.4	1,977.0
1925	7.9	661.1	1955	8.3	2,324.0
1926	6.6	601.8	1956	9.7	2,725.8
1927	6.3	617.1	1957	8.5	2,456.3
1928	6.6	553.1	1958	8.0	2,510.2
1929	7.4	621.5	1959	8.4	2,843.2
AVG. 20's	7.5	610.9	AVG. 50's	8.3	2,236.8
1930	8.1	539.7	1960	10.1	3,212.3
1931	9.4	553.7	1961	9.5	3,055.0
1932	11.5	551.7	1962	8.7	3,218.9
1933	9.2	396.2	1963	7.4	3,155.8
1934	7.7	536.0	1964	7.8	4,210.8
1935	6.4	467.8	1965	8.8	5,176.6
1936	6.0	544.4	1966	7.9	3,925.7
1937	5.8	524.8	1967	9.0	5,228.8
1938	7.1	458.8	1968	8.7	5,328.9
1939	7.0	464.4	1969	8.2	5,375.8
AVG. 30's	7.8	503.8	AVG. 60's	8.6	4,188.9
1940	5.6	353.9	1970	8.7	6,231.2
1941	6.0	469.2	1971	8.2	5,860.6
1942	6.4	694.8	1972	7.3	6,360.8
1943	6.0	999.9	1973	7.7	7,503.2
1944	6.6	1,149.7	1974	6.2	6,347.0
1945	8.1	1,503.6	1975	8.6	8,135.5
1946	7.9	1,982.7	1976	8.5	8,510.5
1947	6.2	1,070.0	1977	9.1	10,012.0
1948	6.5	1,411.9	1978	11.1	16,648.6
1949	6.8	1,388.4	1979	11.8	18,073.9
AVG. 40's	6.6	1,102.4	AVG. 70's	8.7	9,368.3
1980	11.8	15,458.0	1986	18.3	44,494.2
1981	11.9	18,519.0	1987	18.9	49,532.0
1982	12.2	22,599.0	1988	22.0	56,128.9
1983	15.5	29,056.1	1989	21.3	46,058.0
1984	13.6	23,137.0			
1985	15.0	33,591.0			

APPENDIX 2

GENERAL FISHERIES FACTS 1989

P.E.I. Fishermen and Helpers	4,928
Bonafide fishermen *	1,385
Commercial fishermen **	3,543
Vessels - (<55')	1,466
(>55')	3
Licences by Species:	
Groundfish	931
Herring	866
Mackerel	823
Tuna	361
Scallops	401
Lobster	1,308
Eels	261
Silversides	33
Smelts	414
Snow Crab	16
Oysters	1,091
No. of employees in processing plants (approx. maximum in peak season)	2,400
No. of provincially licenced and federally registered export plants (not including buying stations)	37
No. of provincially licenced non-export plants	22
No. of major shellfish shippers	13
No. of trout hatcheries	5
No. of trout processors	3
No. of seaplant companies	4

* Bonafide Fisherman - is a fisherman who is registered as a commercial fisherman, and is the holder of a limited fishery licence, subject to meeting one of the following three conditions:

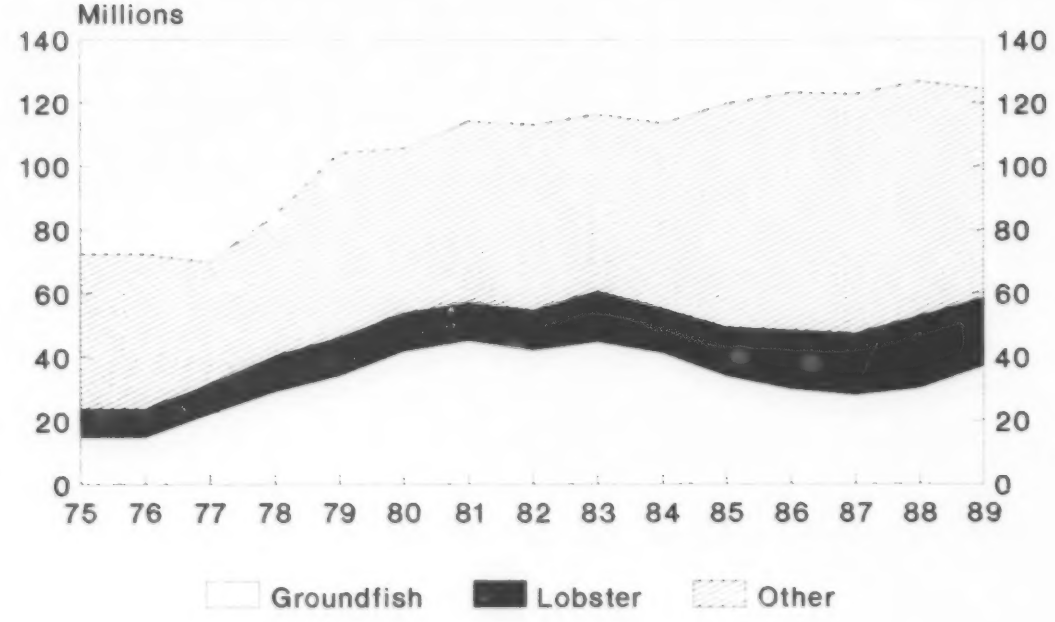
(1) is the holder of a Category A lobster fishing licence.

(2) showed proof of 75 percent or more of his income from fishing using his own boat and/or equipment except where this boat and/or equipment is not required.

(3) showed proof of sales of fish in 1988, with a landed value in excess of $15,000 using his own boat and/or equipment except where this boat and/or equipment is not required.

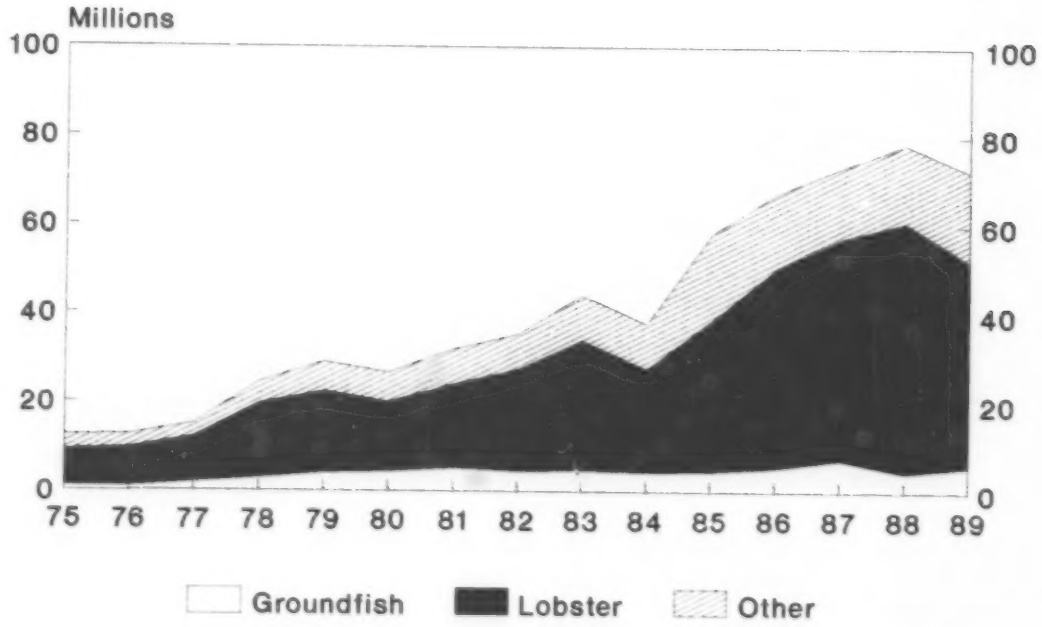
** Commercial Fisherman - is a registered fisherman who does not meet the requirements of a bonafide fisherman.

P.E.I. FISH LANDINGS
1975-89, (Millions lbs)



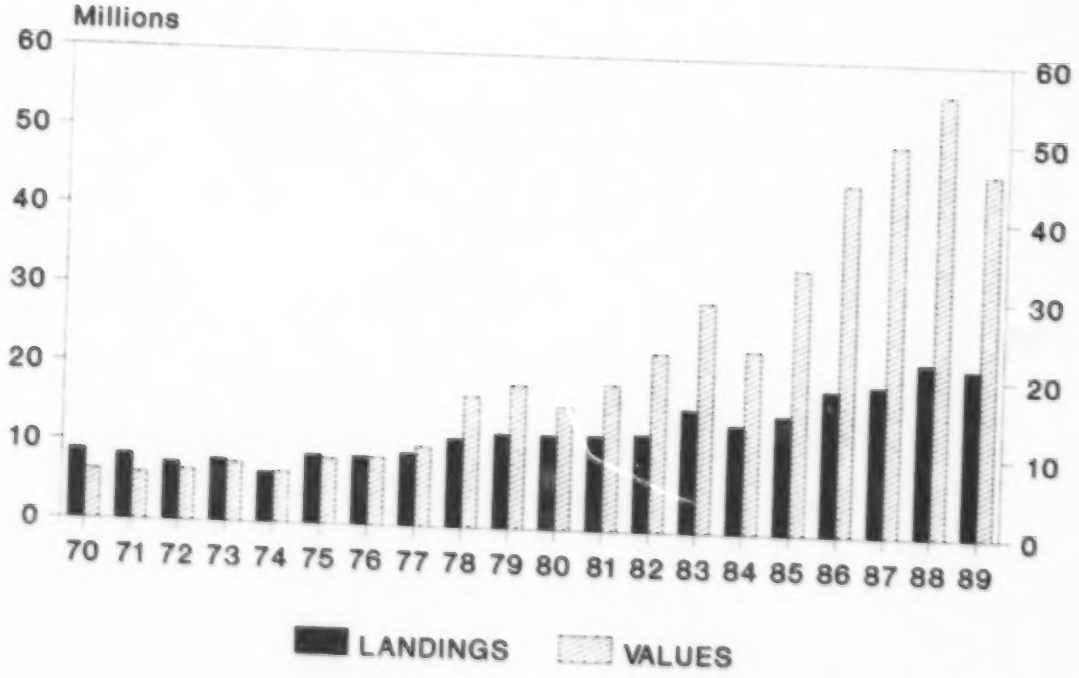
Note: 1989 figures are preliminary.

P.E.I. FISH LANDINGS
1975-89, (Millions $)

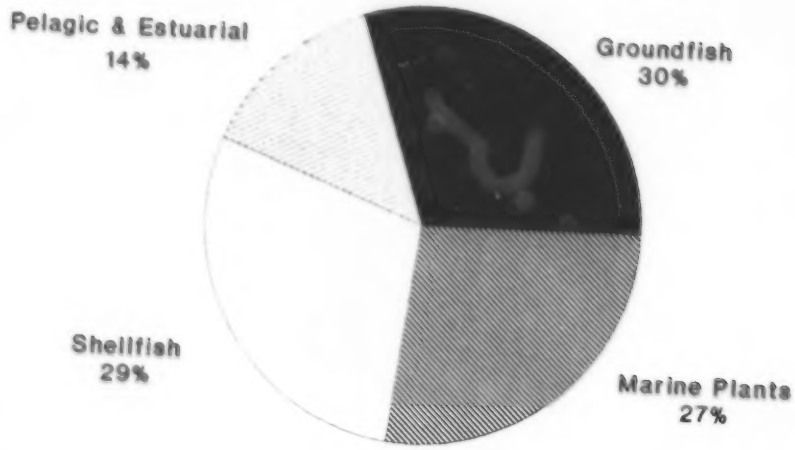


Note: 1989 figures are preliminary.

P.E.I. LOBSTER LANDINGS & VALUES
1970-1989

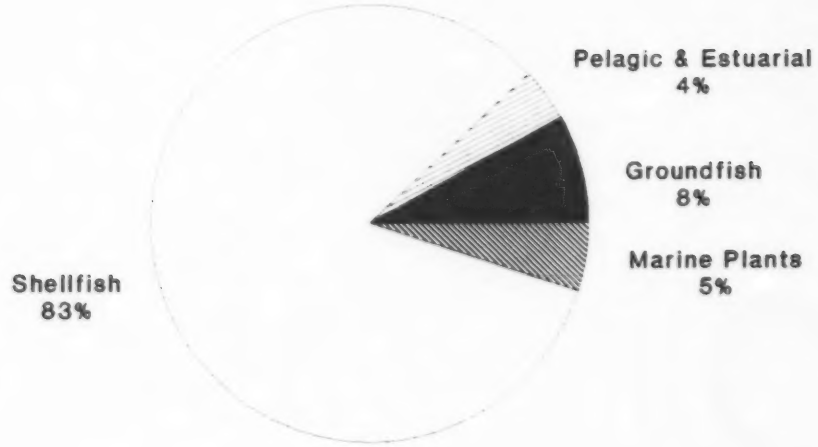


P.E.I. FISH LANDINGS
% of Volume by Species, 1989



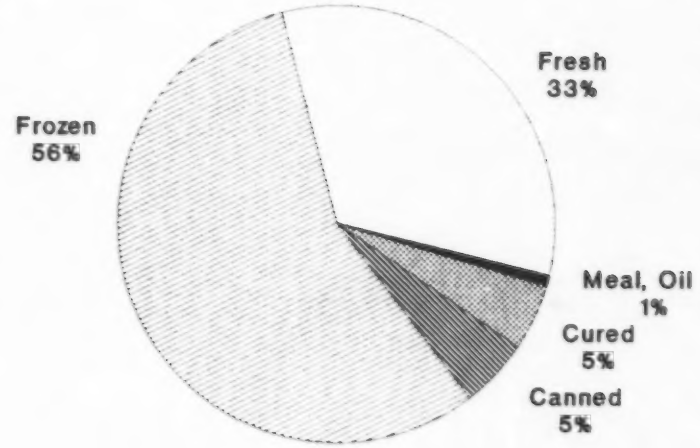
Note: Figures are preliminary.

P.E.I. FISH LANDINGS
% of Value by Species, 1989



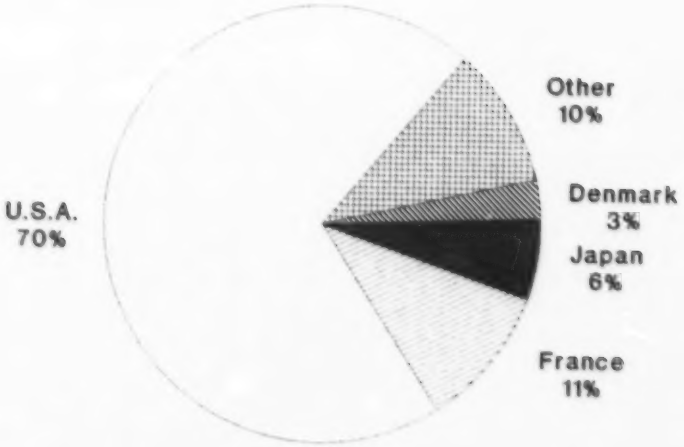
Note: Figures are preliminary.

P.E.I. PRODUCTION SALES
% of Value by Product, 1988



Latest information available.

P.E.I. EXPORT MARKETS
% of Value Per Country, 1988



Latest information available.

APPENDIX 10

ORGANIZATIONAL CHART